

THE IMPLICATIONS OF IMPLEMENTING ELECTRONIC- HUMAN RESOURCE MANAGEMENT (E-HRM) SYSTEMS IN COMPANIES

VARMA SHILPA* AND GOPAL R.

Padmashree Dr. D.Y. Patil University, Department of Business Management, Sector 4, Plot No. 10, CBD Belapur, Navi Mumbai- 400 614, MS, India

*Corresponding author. E-mail: varmshilpa@gmail.com, Mob: 9322269600

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Abstract- The managers of 21st century envision that Information Systems will have a major influence on their style of decision making. The objective of this paper is to identify the challenges associated with the implementation and maintenance of e-HRM systems and also to offer recommendations for enhancing the effectiveness of e-HRM systems. The paper presents a comparative picture between the services vs manufacturing sector w.r.t. the adoption of e-HRM systems in Indian companies. The broad framework of the research design incorporates aspects pertaining to- the possible drivers for introducing e-technology to the HR systems; the barriers to progress in the e-HRM journey; usage of e-technology for HR functions; usage of HR Service delivery tools; perception of respondents regarding their company's position in the e-HRM journey and opinion of respondents on various aspects of the e-HRM functioning. Implementation of e-HRM involves several challenges with its attendant implications like - huge set-up costs, presence of an IT culture, the security of the information and loss of the 'human touch'. Continuous monitoring and feedback are critical for the success of any e-HRM effort in an organization. Any e-HRM installation exercise if taken up in the right perspective, keeping all the challenges in mind can take an organization a long way towards success and manage better the company's most important resource- its people.

Keywords- Human Resource Information Systems, Enterprise Resource Planning, E-HRM, Employee Self-Service, Service Excellence, Talent Management, Change Management, Paperless Office.

INTRODUCTION

Over the past decades the role of the personnel department has been transformed from that of an administrator to more recently a critical component in the competitive success of the business. Companies have now begun to embrace a "human capital approach," one that considers the money spent on fostering innovation in the workforce as an investment. Just as the role of Human Resources continues to change, technology has continued to evolve. If the role of Human Resources has always been to deliver the workforce support and management based on the needs of the business, then technology's role has been that of an enabler. Companies are leveraging human capital technologies for use by everyone in the business. E-HRM (Electronic- Human Resource Management) is a web-based solution that takes advantage of the latest web application technology to deliver an online real-time Human Resource Management Solution [1]. There is a fundamental difference between HRIS (Human Resource Information Systems) and e-HRM in that basically HRIS are directed towards the HR department itself whereas with e-HRM, the target group is not only the HR staff but people outside this department: the

employees and management. Technically speaking it can be said that e-HRM is the technical unlocking of HRIS for all employees of an organization. Wright and Dyer distinguish three areas of HRM where organizations can choose to 'offer' HR services face-to-face or through an electronic means: transactional HRM, traditional HRM, and transformational HRM [2]. E-HRM is a way of implementing HR strategies, policies, and practices in organizations through a conscious and directed support of and/or with the full use of web-technology-based channels [3].

As is the case with all new systems and concepts, e-HRM too comes with its own set of challenges and issues which require a careful scrutiny before being adopted and launched in any organization.

REVIEW OF LITERATURE

According to Beer, Michael, et al. [1985] since the inception of modern management theory, the terminology used to describe the role and function of workers has evolved from "personnel" to "industrial relations" to "employee relations" to "human resources" [4]. In the 1990s several forces were shaping the broad field of HRM and the key

force was that the new technologies—particularly information technology—brought about the decentralization of communications and the shake-up of existing paradigms of human interaction and organizational theory. Broderick & Boudreau [1992] point out that over the years Human Resource Systems have been acknowledged as important inputs of corporate decision making process [5]. Noe, Hollenbeck, Gerhart and Wright [2000] define e-HRM as the processing and transmission of digitized information used in HRM, including text, sound, and visual images, from one computer to another electronic device. E-HRM has the potential to change all traditional human resource management functions. Employees do not have to be in the same geographic areas to work together [6].

Alfred J Walker [2001] advocates the business process re-engineering of the HR function first, then e-engineering the HR work. He suggests the formation of re-engineering teams of providers, customers and users to examine the whole range of HR activities including those which are not being done at present. The end product is a set of processes organized into broad groupings such as re-sourcing, compensation or training and development. These processes should then be examined by the re-engineering team and re-designed. From this redesign comes the picture of a new HR function but Walker argues that the most effective approach is to introduce new technology to deal with the redesigned processes [7].

According to Biswanath Ghosh [2002], in an organization the most valuable input is the human element. The success or failure of an organization depends to a large extent on the persons who manage and run the organization [8]. S.A. Kelkar [2003] identifies the main activities of Human Resources Management where Information systems can be applicable as- Employee records and management, Recruitment & promotion, Training, Job rotation, Succession planning, Employee stock options, Evaluation, Compensation and benefits management. Information Systems also facilitate – Groupware, Document control, Brainstorming, Collaborative work, Work flow automation. It can definitely be said that Integrated system better than dispersed systems [9]. According to L.M. Prasad [2003] large organizations generally install e-HR because it enables them to collect store, process and manipulate large amount of data inputs, reduce costs of maintaining human resource data, and provide accurate information about human resources anytime and anywhere [10].

As asserted by Kettley P, and Reilly P [2003], technology has only recently developed in a way that enables e-HRM to make its mark, especially the introduction of corporate intranets and web-enabled HRIS. Before embarking on e-HRM, organizations should review and optimize their business

processes. The development of e-HRM systems is growing, allowing the HR function to become more strategic. This can most easily be observed by the fact that today employees tend to ask for advice rather than administrative assistance. This is the reverse of the situation in the late 90s. Furthermore, the nature of HR departments has changed because of the development of e-HRM. A few years ago businesses tended to have more, but less qualified HR staff whereas today the reverse applies. S. Sadagopalan [2004] observes that Information systems to support the personnel function have once again taken the record keeping view rather than the decision support view. Particularly in the Indian context, it is limited to creating large databases often of questionable value and accuracy. Slowly this trend is changing at least in more enlightened companies [12].

Laudon and Laudon [2004] explore the digital integration of the firm and the use of internet technology to digitally enable business processes for electronic business and electronic commerce. They focus on new applications and technologies that improve firms' relationships with customers and create additional value through closer collaboration with suppliers and other business partners [13]. Gupta and Chhabra [2004] assert that the twin objectives of any Human Resource Information Systems can be understood as- Operational Efficiency and Effective Managerial Decision Making [14]. Jessup and Valacich [2004] explore the various kinds of Information Systems and the innovative techniques by which they are being used by organizations for their benefit [15]. According to Garry Dessler [2004], technological applications play an increasingly important role in HR. Technology improves HR functioning in four main ways: self service, call centers, productivity improvement and outsourcing [16].

Foster [2004] describes that the application of the internet to the Human Resource function (e-HR) combines two elements: one is the use of electronic media whilst the other is the active participation of employees in the process. These two elements drive the technology that helps organizations lower administration costs improve employee communication and satisfaction, provide real time access to information while at the same time reducing processing time [17].

Jawadekar [2005] emphasizes the role of decision support systems in Management Information Systems (MIS) and explains the factors behind successful implementation of Management Information Systems within the organization [18]. O'Brien [2005] places a major emphasis on the strategic role of information technology in providing business professionals with tools and resources for managing business operations, supporting decision making, enabling enterprise collaboration and gaining competitive advantage [19].

Fletcher [2005] traces the transformation of human resources from manual processes to sophisticated CRM and ERP systems and examine the effectiveness of online strategies for attracting talent. She argues that businesses have to adopt a 'Human Capital Management' approach to make the most of any organization's greatest asset: the skills, knowledge and experience of its staff. Fletcher contends that for HR to survive in this brave new world it needs to "possess a technology" [20]. Farooq and Khan [2005] outline the steps in implementing an HRIS. These are: Inception of idea, Feasibility Study, Selecting a project team, Defining the requirements, Vendor analysis, Contract negotiations, Training, Tailoring the system, Collecting data, Testing the system, Starting up, Running in parallel, Maintenance, Audit [21].

Aravind S. & Paramashivaiah [2006] emphasize that it is critical for every organization to resort to means that offer quality recruitment solutions at competitive costs. This is where the realm of e-Recruitment starts [22]. Ramasubramanian & Periasamy [2006] have very vividly described the advantages of an Institutional Enterprise Resource Planning (ERP) Systems that are specially designed for inter module information sharing [23]. Sacht [2007] observes that technological change is a key driver for HR transformation, providing the foundation to support HR's growing strategic focus. In particular, web and internet technologies have already given workers direct access to each other, to HR, and to business information with such ease and intelligence that every worker can contribute more directly to business results [24].

Scott [2008] observes that if one would separate the HR function into two broad components, namely transactional and non-transactional activities, then it is easy to envisage the transactional components being e-enabled. In most of the non-transactional HR activities, a continuum of e-possibilities exists. The conservative point on the continuum would suggest that no electronic mechanisms should be used to replace "people" activities, while the radical view on the continuum would suggest that technology could replace all direct human interaction with the HR customer [25].

A major finding of the Cedar Crestone Survey [2008-09] is that HR technologies are increasingly important to business leaders [26]. The first Cedar Crestone Asia Pacific-APAC HR Systems Survey [2008-2009] discovered that the number one business initiative for APAC survey respondents is a focus on metrics and analytics and Self service and moving to an HR service centre approach enables organizations to serve more employees with their HR staff [27].

OBJECTIVES OF THE STUDY

Through this research an endeavor has been made to identify the challenges involved in achieving administrative/service excellence by companies through e-HRM and also the challenges of moving towards performance excellence. By understanding and overcoming these challenges, companies can be successful in achieving the primary objective of any e-HRM venture i.e. to diminish costs of HR transactions, condense time value and make resources easily available for utilization.

The objectives of this research are:

- To identify the underlying factors and pre-requisites for the success of an e-HRM venture.
- To identify the challenges associated with the implementation and maintenance of e-HRM systems.
- To offer recommendations and suggestions for enhancing the effectiveness of e-HRM systems.

RESEARCH METHODOLOGY

The study was confined to the state of Maharashtra, India and a sample size of 1000 companies in the private sector. The sample unit was a company that has adopted e-HRM (at least three HR functions being run on e-technology and planning to go further), represented by a manager or Director responsible for HR functions. For purposes of comparison a broad classification of companies into Services sector vs Manufacturing sector has been considered, hereafter referred to as Services group and Manufacturing group respectively (Services group: 344 respondents; Manufacturing group: 656 respondents). The sampling units were identified using Judgment and Convenience Sampling.

The research instruments used were questionnaire and interviews. The broad framework of the research design incorporated aspects pertaining to the possible drivers for introducing e-technology to the HR systems, the barriers to progress in the e-HRM journey, usage of e-technology for the various HR functions, usage of HR Service delivery tools like ESS and MSS, nature of sourcing solutions adopted by companies for enabling e-technology to HR systems, perception of respondents on a five-point scale regarding their company's position in the e-HRM journey, expectation of respondents w.r.t. e-HRM system being successful in satisfying employees in their HR needs, expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure incurred on the same and opinion of respondents on various aspects of the e-HRM functioning.

THE GLOBAL e-HRM SCENARIO

Human resources as a function has evolved into Human Capital Management (HCM). Where Human Resources was the responsibility of a centralized, or

sometimes decentralized department, Human Capital Management is the job of everyone in the business, from employees to executives. Today, every Human Resources department is in the midst of a seemingly endless transformation, one that not only encompasses the function of the Human Resources department, but also its role within the business, the relationships it maintains, and the technology it uses and is responsible for deploying. It is clear that transformation of Human Resources is inevitable. More and more, businesses are realizing that people are the only true differentiating factor in long-term competitive success.

The Cedar Crestone survey (2008-09) on the state of HR technology adoption covering organizations across North America, Europe, Asia and Australia chalks out a roadmap followed by most organizations that have an ERP-based HRMS as their foundation. (Refer figure 1)

Figure 1 shows that the roadmap followed by most organizations that have an ERP-based HRMS as their foundation is as follows- Administrative Excellence, Service Delivery Excellence and Performance Excellence. Some of the major highlights as per the Cedar Crestone Survey on the state of HR technology adoption 2008-2009 are –

- Topping the list of initiatives are activities around metrics and analytics.
 - Administrative applications are very mature with some movement from in-house to software-as-a-service solutions, hosting, or full business process outsourcing.
 - Service delivery applications continue to be adopted. A move to a service center approach with an HR-oriented help desk is a key differentiator.
 - Web 2.0 innovations are the arena of early adopters. Organizations using social networking for recruiting and branding had double the sales growth of organizations without these tools.
 - The learning management application in any combination with other talent management applications is linked to the strongest revenue growth.
 - An integrated talent management approach with service delivery, talent management, and business applications on the same platform as the core HRMS is a best practice.
 - The stance organizations are taking regarding sourcing is not one of total business process outsourcing where processes and systems are lifted and shifted to an outsourcer. It is still one of selective outsourcing.
- Change management continues to be the one key differentiator towards achieving a successful HR technology project or sourcing change.
 - Australia/New Zealand (ANZ) organizations are generally at the leading edge of technology adoption in the APAC region. The top automation under way includes portals and employee and manager self service. The top talent management initiative is learning management
 - North Asia (China, Hong Kong, Taiwan) respondents have above average adoption of manager self service and thus are achieving some of the stronger benefits of service delivery automation. For talent management applications, they have then deployed training enrollment, learning management, and competency management.
 - The South Asia (India, Malaysia, Philippines, Singapore, Thailand) respondents particularly among the Indian organizations are strongly focused on aligning employee performance with organizational objectives and implementing the performance management application. They are also implementing competency management and succession planning. In fact, the Indian organizations are further along than the other countries of the region in talent management application adoption.

Indian organizations are much further along than any other country in their adoption of the HR-oriented help desk. As leading outsourcing firms serving the rest of the world, many of these organizations use this technology to serve customers, and are also applying it to their own employee base. Finally South Asia respondent organizations are quite a bit further along than other regions in their adoption of the business intelligence applications, with the most work being done among the Indian Financial Services organizations.

In India the pioneers in adopting and apparently in benefiting from the e-HRM initiatives have been companies in the IT, BPO and retail banking sectors where employee numbers run into tens of thousands. But now even traditional FMCG companies are following suit. HR departments in many non-IT companies are also adopting e-HRM. The HR outsourcing business opportunity is large and India is likely to garner a larger and larger piece of this pie in the future. India, with its intrinsic geographic positioning, is emerging as a viable destination for HR outsourcing companies to set up their businesses. Experts say the basic reasons hampering the growth of HR outsourcing in India

are confidentiality and cost factors. Moreover, the fear of losing jobs, losing control over confidential data, ethics and quality of outsourcing vendors, security breaches and overall confidence in the vendors deters many organizations. The biggest problem - and this is why the HR outsourcing industry in India is on the back foot - is the government and the industry's failure to tackle issues like data security and data privacy. Some established service providers like SAP have adopted a phased approach to introducing the on-demand software as a service (SaaS) model. E-HRM has become an inseparable part of the functioning of almost all the large business players in the Indian scenario. It helps in integrating the widespread activities of organizations by enabling connectivity between different organizational functions and providing accurate and timely personnel information on-line and round the clock.

FINDINGS

1. Drivers for introducing e-HRM systems in companies

Table 2.a shows the 10 considered drivers for introducing e-HRM systems in companies and the corresponding mean ranks. Table 2.b shows the top five drivers for introducing e-HRM systems in companies. It can be observed from the table that-

- The topmost driver for introducing e-HRM systems to companies for both the Services and Manufacturing groups is- to enable HR cost saving and control.
- Reducing time spent on routine administrative tasks by HR staff and reducing paper transactions are common drivers for both the groups.
- For the Services group another major driver is – to improve HR transactions accuracy/speed/Integrity.

2. Usage of e-technology for the considered Human Resource Functions

Table 3.a shows the usage of e-technology for each of the 18 considered Human Resource Functions.

H₀₁: There is no significant difference in usage of e-technology for the considered HR function between Services vs Manufacturing groups.

The hypothesis is tested w.r.t. each of the considered HR functions- a to r (refer Table 3.a). H₀₁ is rejected for the following HR functions- Recruitment and Selection; Manpower Planning; Communication; Training and Development; Performance Management; Induction; Maintaining Employee Records; Compensation Planning; Competency Mapping; Career Planning; Succession Planning; Employee Transition; Travel Management; Exit Management; Selecting Benefits.

There is a significant difference in the usage of e-technology between Services vs Manufacturing groups for these HR functions. The usage of e-technology is comparatively higher in the Services group viz-a-viz the Manufacturing group for these HR functions. (Refer Table 3.b)

H₀₁ is accepted for the following HR functions- Payroll Management; Attendance Management; Leave Management. There is no significant difference in the usage of e-technology between Services vs Manufacturing groups for these HR functions. A very high percentage of respondents in both groups use e-technology for these HR functions. (Refer Table 3.b)

Table 3.b shows that the usage of e-technology is comparatively higher in the Services group viz-a-viz the Manufacturing group.

3. Usage of HR Service Delivery Tools

Table 4 shows the usage of the 5 considered HR Service Delivery Tools

H₀₂: There is no significant difference in the usage of the considered HR Service Delivery Tool between Services vs Manufacturing groups.

The hypothesis is tested w.r.t. each of the considered HR Service Delivery Tools- a. to e. (refer Table 4).

H₀₂ is rejected i.e. there is a significant difference in the usage of HR Service Delivery Tools between Services vs Manufacturing groups w.r.t. each of the considered HR Service Delivery Tools - Employee Self Service; Management Self Service; E-Learning Portal; Intranet; Web 2.0 Technology. The usage of HR Service Delivery Tools is comparatively higher in the Services group viz-a-viz the Manufacturing group. In the Services group more than 90% of all the respondents have reported the usage of all the given HR Service Delivery Tools. In the Manufacturing group, the highest percentage of respondents has reported the usage of Intranet (75%) followed by ESS (60%), E-learning Portal (41%), MSS (30%) and Web 2.0 only 13%.

4. Perception of Respondents regarding their company's position in the e-HRM journey today

Table 5 shows the perception of respondents regarding their company's position in the e-HRM journey today

H₀₃: There is no significant difference between Services vs Manufacturing groups regarding their perception of their company's position in the e-HRM journey today.

H₀₃ is rejected i.e. there is a significant difference between Services vs Manufacturing groups regarding their perception of their company's position in the e-HRM journey today. On a five-point scale ranging from '1: Neither understand nor value e-HRM' to '5: Complete incorporation of e-HRM strategy into the business model' the Services group as compared to the Manufacturing group perceives itself to be closer towards complete incorporation of e-HRM strategy into the business model (Refer Table 5).

5. Perception of Respondents regarding their company's position in the e-HRM journey after five years

Table 6 shows the opinion of respondents regarding their perception of their company's position in the e-HRM journey after five years

H₀₄: There is no significant difference between Services vs Manufacturing groups regarding their perception of their company's position in the e-HRM journey after five years.

H₀₄ is accepted i.e. there is no significant difference between Services vs Manufacturing groups regarding their perception of their company's position in the e-HRM journey after 5 years. On a five-point scale ranging from '1: Neither understand nor value e-HRM' to '5: Complete incorporation of e-HRM strategy into the business model' both the Services group and the Manufacturing group perceive themselves to be at a similar level after five years (Refer Table 6).

6. Perception of Respondents regarding their company's position in the e-HRM journey today vs 'after five years' (Services group)

Table 7 shows the perception of respondents in the Services group regarding their company's position in the e-HRM journey today vs 'after 5 years'.

H₀₅: There is no significant difference in the perception of the Services group regarding their company's position in the e-HRM journey today vs 'after 5 years'.

H₀₅ is rejected i.e. there is a significant difference in the perception of the Services group regarding their company's position in the e-HRM journey today vs 'after 5 years'. On a five-point scale ranging from '1: Neither understand nor value e-HRM' to '5: Complete incorporation of e-HRM strategy into the business model' there is a significant shift from a lower level today to a higher level after five years (Refer Table 7).

7. Perception of Respondents regarding their company's position in the e-HRM

journey today vs 'after five years' (Manufacturing group)

Table 8 shows the perception of respondents in the Manufacturing group regarding their company's position in the e-HRM journey today vs 'after 5 years'.

H₀₆: There is no significant difference in the perception of the Manufacturing group regarding their company's position in the e-HRM journey today vs 'after 5 years'.

H₀₆ is rejected i.e. there is a significant difference in the perception of the Manufacturing group regarding their company's position in the e-HRM journey today vs 'after 5 years'. On a five-point scale ranging from '1: Neither understand nor value e-HRM' to '5: Complete incorporation of e-HRM strategy into the business model' there is a significant shift from a lower level today to a higher level after five years (Refer Table 8)

8. Barriers to progress in the e-HRM journey
Table 9.a shows the 10 considered barriers to progress in the e-HRM journey and the corresponding mean ranks. Table 9.b shows the top five drivers for introducing e-HRM systems in companies. It can be observed from the table that-

- Inadequate Financial Resources is amongst the top two barriers for both the Services and Manufacturing groups.
- In the Services group the topmost cause of concern is – Difficulty in converting standardized packages into customized and user friendly modules, other concerns being Lack of innovation, Insufficient tangible benefits and Issues w.r.t. security of data.
- In the manufacturing group in addition to Inadequate Financial Resources, other issues of concern are – Resistance to change, Inadequate training, Poor technical infrastructure and Inability to convert standardized packages into customized and user friendly modules.

9. Expectation of respondents w.r.t. e-HRM being successful in satisfying employees in their HR needs

Table 10 shows the expectation of respondents w.r.t. e-HRM being successful in satisfying employees in their HR needs

H₀₇: There is no significant difference in the expectation of respondents w.r.t. e-HRM being successful in satisfying employees in their HR needs between Services vs Manufacturing groups.

H₀₇ is rejected i.e. there is a significant difference in the expectation of respondents w.r.t. e-HRM being

successful in satisfying employees in their HR needs between Services vs Manufacturing groups. On being asked whether e-HRM will be successful in satisfying employees in their HR needs, a substantially large proportion (89%) of respondents in the Services group gave a reply in the affirmative (Yes), as compared to the Manufacturing group for whom the proportion was 71%. Almost an equal proportion (5%) gave a reply in the negative (No) in both the groups. In the services group a very small proportion (6%) were undecided, whereas in the Manufacturing group a substantial proportion (23%) gave the reply as 'Can't Say'. There is a significant difference in the expectation levels of the two groups. (Refer Table 10)

10. Expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure on the same

Table 11 shows the expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure on the same.

H₀₈: There is no significant difference in the expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure on the same between Services vs Manufacturing groups.

H₀₈ is rejected i.e. there is a significant difference in the expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure on the same between Services vs Manufacturing groups. On being asked whether the benefits from e-HRM will justify the expenditure on the same a very large proportion (96%) of the respondents in the Services group in comparison to only 50% in the Manufacturing replied in the affirmative (Yes). Only 2% in the Services group as compared to 31% in the Manufacturing group replied in the negative (No). A negligible proportion (1%) in the Services group were undecided in their opinion as compared to 21% in the Manufacturing group. There is a significant difference in the expectation levels of the two groups. (Refer Table 11).

On comparing the two groups the findings show that the Manufacturing group is moving towards achieving Administrative excellence (routine HR tasks being e-enabled) whereas the Services group has moved beyond administrative excellence and is now in the process of achieving Service excellence (high usage of HR Service Delivery Tools). The gap between the Manufacturing and Services group is likely to be bridged in about a time-span of 5-6 years. However, it is yet to be seen how fast both the sectors move towards Performance Excellence (HR metrics and Business Intelligence).

11. Opinion of respondents on various aspects of the e-HRM functioning

Opinion of respondents taken on 30 statements (i to xxx) marked on a five-point scale - Strongly disagree, Disagree, Undecided, Agree and Strongly agree, are as follows:

- (i) About 50% of the respondents agree/strongly-agree with the view that the e-recruitment process operates with the need to match employee profile with positions vacant in the organization. Only about 20% disagree/strongly-disagree with the view and about 30% remain undecided.
- (ii) About 50% of the respondents agree/strongly-agree with the view that e-HRM technology has helped in reducing the time and effort in preparing the job-description and job-specification whereas 32% disagree/strongly-disagree. About 20% remain undecided.
- (iii) About 44% of the respondents agree/strongly-agree with the view that the candidate application maintained and recorded online has made the applicant tracking system easily accessible. About 30% disagree/strongly-disagree and about 26% remain undecided.
- (iv) Regarding the view that the e-HRM technology has ensured an effective salary administration system, about 61% of the respondents agree/strongly-agree and only 7% disagree. About 32% of the respondents are undecided, whereas none of the respondents strongly-disagree with the view.
- (v) A majority of the respondents (about 93%) agree/strongly-agree with the view that the pay structure has been clearly defined in the e-HRM system. About 1% remain undecided on the issue and only 5% disagree. None of the respondents strongly-disagree with the view.
- (vi) W.r.t. timeliness of pay-cheques in reaching the employees since the implementation of e-HRM, about 56% of the respondents agree/strongly-agree and 29% disagree with the view. About 15% are undecided and none of the respondents strongly-disagree with the view.
- (vii) About 24% of the respondents strongly-disagree with the statement that the recording of employee

- absence, vacation, sickness etc via e-HRM technology reflects in the pay roll system whereas about 17% disagree. Of the total respondents about 41% agree/strongly-agree with the statement and about 18% of the respondents remain undecided.
- (viii) A substantial proportion of respondents i.e. about 31% remain undecided on the issue that the e-HRM process has enabled employees to enroll for flexible benefits administration effectively. Also, a substantial proportion i.e. 41% disagree/strongly-disagree on the statement. Only about 28% agree/strongly-agree on the issue.
- (ix) A substantial proportion i.e. 37% of the respondents remains undecided on the view that the compensation frame work implemented by the e-HRM allows managers to calculate incentives and rewards for the employees online and very small proportion (4%) disagree/strongly-disagree with the statement. More than ½ of the respondents (58%) agree/strongly-agree with the view.
- (x) More than ½ of the respondents (52%) agree/strongly-agree with the opinion that the assessment of employee performance online helps to calculate performance related pay effectively. A relatively small proportion of 7% remain undecided on the issue. About 41% of the respondents disagree/strongly-disagree.
- (xi) Several respondents i.e. about 25% are undecided on the view that e-HRM process has been effective in providing clear role definitions. A substantial proportion (50%) disagree/strongly-disagree with the view. Of all the respondents 25.38% agree/strongly-agree with the view.
- (xii) A substantially large proportion of respondents (34.90%) strongly-disagree with the view that the e-HRM process has enabled to identify and nurture individual talents and help to raise their performance. About 7% disagree with the view whereas about 26% remain undecided. Of the total respondents about 33% agree/strongly-agree with the view.
- (xiii) About 56% of the respondents agree/strongly-agree with the view that the self service e-learning opportunities have supported employees to keep their knowledge and skills up-to-date. A substantial proportion i.e. about 35% remain undecided on the issue whereas a relatively small proportion i.e. 9% disagree/strongly-disagree with the view.
- (xiv) About 41% of the respondents agree/strongly-agree with the view that the e-learning strategies have brought about an effective change in leadership development and almost an equal proportion disagree/strongly-disagree with the view. Of the total respondents 18% remain undecided on the issue.
- (xv) About 43% of the respondents agree/strongly-agree with the opinion that e-HRM has provided sufficient opportunities for employees' career planning and development. Of the total respondents 36% disagree/strongly-disagree with the view whereas 21% remain undecided.
- (xvi) W.r.t. the view that training through e- HRM helps in recommending candidates for promotion and individual compensation awards about 46% of the respondents agree/strongly-agree. A substantial proportion (45%) disagrees and only 5% strongly disagree with the view. About 10% remain undecided.
- (xvii) More than ½ of the respondents (52%) disagree/strongly-disagree with the opinion that the employees have been provided with necessary resources and sufficient training to be able to use e- HRM technology. About 32% of the respondents agree/strongly-agree with the view and about 16% remain undecided.
- (xviii) Regarding the opinion that the intranet delivered communication system has provided opportunity for employees to participate in communication and consultation activities approximately 50% of the total respondents remain undecided on the issue and about the same proportion agree/strongly-agree on the issue. None of the respondents disagree/strongly-disagree with the view.
- (xix) A substantial proportion of the respondents(41%) disagree with the view that the e-HRM system is geared to understanding and

- following grievance, disciplinary and poor performance issues in a timely and compliant manner. Also, about 33% are undecided on the issue. Of the total respondents about 26% agree/strongly-agree with the view.
- (xx) W.r.t. the view that the e-HRM system has increased employee commitment with the organization by boosting their motivation and confidence levels about 46% of the respondents agree/strongly-agree and 35% disagree/strongly-disagree with the view. Of the total respondents about 18% remain undecided.
- (xxi) A substantial proportion of the respondents (42%) remain undecided on the opinion that the e-HRM process ensures compliance with policy and procedures and equal proportion agree/strongly-agree with the view. Of the total respondents about 15% of the respondents disagree with the view whereas none of the respondents strongly-disagree.
- (xxii) On the opinion that working with e-HRM is clear and understandable a substantially large proportion (42%) remains undecided on the issue, about 46% agree/strongly-agree and about 12% disagree with the view. None of the respondents strongly-disagree with the view.
- (xxiii) W.r.t. the view that policies formulated under e-HRM technology are easy to comprehend, credible and are user friendly, a substantial proportion (45%) of the respondents remain undecided. About 47% agree/strongly-agree and a relatively small proportion of respondents i.e. about 8% disagree/strongly-disagree with the view.
- (xxiv) About 35% of the respondents disagree with the view that since the implementation of e-HRM technology the HR department is increasingly involved in strategic HR activities. A very small proportion i.e. about 1% strongly- disagree with the view. About 29% remain undecided whereas about 35% agree/strongly-agree with the view.
- (xxv) W.r.t. the view regarding the e-HRM technology being compatible with other systems in use, 43% of the respondents agree/strongly-agree with the view and about 46% disagree/strongly-disagree. Of the total respondents about 11% remain undecided on this issue.
- (xxvi) Regarding the view that e-HRM system is user friendly, more than ½ i.e. about 51% of the respondents agree/strongly-agree with the view whereas about 31% disagree. Of the total respondents about 18% remain undecided and none of the respondents strongly-disagree.
- (xxvii) In the opinion of respondents regarding the timely availability of information through the e-HRM system, about 54% of the respondents agree/strongly- agree with the view whereas only 19% disagree. Of the total respondents about 27% remain undecided.
- (xxviii) A very large proportion of respondents i.e. about 88% agree/strongly-agree with the view that the e-HRM system provides up-to-date information. None of the respondents disagree/strongly-disagree with the view whereas about 12% remain undecided.
- (xxix) W.r.t the opinion of respondents on the view that the e-HRM system has ensured a clear fit between business and HR strategy about 52% of the respondents agree/strongly-agree and 25% disagree. None of the respondents strongly disagree whereas about 23% remain undecided.
- (xxx) W.r.t. the view that e-HRM has been an effective change agent for positively molding the employees' attitudes towards the use of technology more than ½ i.e. about 56% of the respondents agree/strongly-agree whereas about 30% disagree. None of the respondents strongly-disagree with the view and about 14% remain undecided.
- A majority (more than half) of the respondents agrees with the views that - e-recruitment process operates with the need to match employee profile with positions vacant in the organization; pay structure has been clearly defined in the e-HRM system; the assessment of employee performance online helps to calculate performance related pay effectively; self service e-learning opportunities have supported employees to keep their knowledge and skills up-to-date; e-HRM system is user friendly; e-HRM system provides up-to-date information and e-HRM has been an effective change agent for

positively moulding the employees' attitudes towards the use of technology.

However, as per the respondents' view the e-HRM system needs to gear up w.r.t. the following areas - enabling employees to enroll for flexible benefits administration; providing employees with necessary resources and sufficient training to be able to use e-HRM technology and enabling the HR department to be increasingly involved in strategic HR activities.

The Pre-requisites and Challenges of e-HRM

A careful analysis and interpretation of the information collected helped in identifying the following pre-requisites and challenges w.r.t. any e-HRM venture:-

The Pre-requisites of e-HRM

- Commitment to change management from the start of the project
- Presence of an IT Culture an important pre – condition
- Culture of Knowledge management
- Involvement of all the stakeholders early on to gain their buy-in
- Communication of the value of any technology solution to the users
- Clarity on the part of all users regarding the question- "What's in it for me?"
- Adequate training to the users

The Challenges of e-HRM

Among the most prevalent issues facing management are control, business requirements, and best practices. Some of the major challenges that have been identified are-

- **Cost Implications:** Costs tend to be proportional to requirements and the type of organization. Given the costs, companies must e-enable only those operations that are vital, essential or desirable.
- **Aligning the e-HRM system with the business requirements:** ERP applications vary widely in their allowance for control, typically assuming either a corporate or business-unit locus of control. Hence management must consider the ERP's stance on control to ensure it will meet the business requirements of the company.
- **Security of the information generated:** A company needs to ensure that outsiders or competitors should not access the information. In this context proper vendor selection is a critical condition to ensure confidentiality.
- **Managing the data:** Managing the huge amount of data generated through HRMS

is a relatively new challenge for companies.

- **'Overkill' and loss of the 'human touch':** Another challenge is the avoidance of 'overkill' and loss of the 'human touch'. It should not be the case that in a bid to be techno-savvy we neglect the human side.
- **For traditional companies the task is more so difficult:** E-HRM is more so a challenge for the traditional companies which need to bring about a change in the mindsets to a large extent. These companies as compared to those in the IT sector, BPOs etc. are having a tougher time getting people to speed up on these e-HR tools.
- **Customization to be taken up in the right perspective:** Most of the packages are of international standards and based on best practices. Hence customization is huge in the Indian context and needs to be taken up in the right perspective. Customizations can also be costly and maintaining and upgrading customizations can be cumbersome.
- **Training the users a crucial issue:** Training the users is many a time a long drawn out process, as many people do not find them to be user friendly.
- **The Return On Investment (ROI) on an e-HRM project to be justified:** The ROI on an e-HRM project is the projected cost reduction brought about by the system and its impact on revenue/profits over time. The e-HRM initiative should align itself with the overall HR and IT strategy and ultimately, with the business strategy to ensure ROI.
- **ERP to function along with other systems to be successful:** Companies wanting to integrate their value chains with the business activities of their suppliers, business partners and customers typically have to implement systems other than ERP like Customer Relationship Management (CRM) and others.
- **Continuous monitoring and feedback:** Continuous monitoring and feedback are critical for the success of any e-HRM effort in an organization.

RECOMMENDATIONS AND SUGGESTIONS

A careful consideration of all the outlined issues is imperative before undertaking any e-HRM venture. Some of the important factors to be considered before going in for any e-HRM venture are highlighted here –

- **Planning for employee and organizational issues from the outset:** Most companies understand the need to address potential issues when implementing large-scale, cutting-edge initiatives. But many companies may underestimate the importance of preparing their organizations for small to mid-sized projects too. The Key to Success lies in seeking stakeholder engagement and buy-in, assessing organizational impact and creating communication and training plans
- **Assessing the Flexibility of the HR Technology:** Reduce the risk of technology obsolescence by assessing the flexibility of the solution prior to implementation. Ensure that the solution is flexible enough to adapt to changing needs in the future.
- **Service Delivery Applications:** To serve more employees, companies should move to manager self service and a service center approach or outsource their processes and systems. To keep the processes and systems in-house, implement help desk for HR and to outsource, partner with a vendor with state-of-the-art self service offerings.
- **HR Service Centers - Investments to Consider:** One needs to consider the advantages of separating out HR administration from more strategic work and of standardizing and centralizing this activity in an in-house HR service centre. In this context the issues that need to be addressed are managing the transition, staffing the service centre and the role of technology. Actionable measures give companies information that can be used to determine future strategies. By analyzing call patterns and topics, companies gain insight into employees' top concerns. This information can then be used to develop targeted programs to resolve problems before they cause harm.
- **Outsourcing HR administration:** The business case for outsourcing HR administration centers on the potential for cost savings to be delivered by investment in e-enabling HR transactions and processes. Outsourcing HR administration is a major project for any organization and requires careful planning. Freed from the HR administrative workload, a company's newly streamlined HR function can act more strategically both in policy formulation and in business partner roles.
- **Creating an Effective eStatement:** a Primer: Communicating the value of investment in employee compensation, health insurance, pension plans and other benefits is crucial for engaging and motivating employees. Web-based total compensation statements, or eStatements, are important tools for increasing employees' benefits awareness. When properly designed and implemented, they improve employees' knowledge and satisfaction while reducing HR's administrative workload and costs.
- **Use of Case Management Tools for Compensation Planning:** Simple to use and relatively low-cost, case management tools help to reduce call volume, improve response times and better manage large-scale employee events. Adding advanced case management tools or upgrading the existing system can considerably add to the capability to track and manage individual and group transactions from start to finish.
- **E-Recruitment:** With the advent of the World Wide Web, there has been a paradigm shift in the ways companies recruit the world over. Some of the advantages of Internet Recruiting are - Hires Top Talent, Lowers Recruiting Costs, Telescoping Recruiting Lead Time, Enlarged Candidate Pool, Phenomenal Geographical Reach, Choosing Job-Sites and Managing Job Postings, Creating a 'Killer' Job Posting, Multi-site Resume Harvesting
- **E- Retirement:** A company can improve the perceived value of pension benefits so that the costs are aligned with that value in the eyes of employees. The best bet is to help employees calculate today's value of their pension benefit so they have an informed view of their future benefits. Offer an online pension "estimator" delivered from a web site with simple, easy-to-use navigation.
- **Data mining tools:** Data mining tools use regression and other analytic techniques to discover and report correlations and trends among sets of data. To get the most from data mining processes, organizations should improve data accuracy, establish global standards and emphasize actionable insight.
- **Investing in Portal Technology:** While the potential expansion of employee portal and intranet budgets is welcome news, capitalizing on it requires careful prioritization of resources. Personalization and smart search capabilities are two

investments that companies should consider. Personalization gives employees the information they need without requiring them to sift through materials they don't and also helps companies' direct communications and messaging to specific employee groups. By putting strong, "smart" search engines in place, companies help employees find the information they need, when they need it, with a minimum of effort.

- **Best Practices of HR Portals:** Here are some suggestions from companies that have been successful getting a portal up and running.
 - Company site should be designed as an "employee-centric" site, which means that the tools and applications should be user-friendly, easy-to-navigate and intuitive.
 - Facilitate communication between technical and content people.
 - Devise a simple prototype of an HR module, implement it, and then work with end users to expand the functionality of the system.
 - Personalize or customize wherever possible.
 - Develop a process for content ownership and updating.
 - Evaluate processes before automating them. Instead of automating an inefficient process, reengineer it and then automate it.
 - Provide "self-service" access for everyone.
 - "Advertise" new content. Be creative in introducing new features.
 - "Brand" the company site. Give the HR site a name and identity to help employees perceive it as the "go to" place.
 - Develop ways to attract and retain talented Web designers.
 - Create a fallback resource in form of a "help desk" to answer questions about Web tools and features and to direct the users to needed Web information.
- **E-learning:** Many organizations are now adopting a 'blended' approach to learning and development. This is based on the recognition that e-learning is just one of many forms of training delivery, all of which have a role to play in providing employees with essential knowledge and understanding. The greatest strength of e-learning lies in its potential to provide a

consistent level of training when and wherever it is needed.

- **HR intranets:** HR intranets are playing an important role in reshaping the e-HR function. They play a pivotal role in providing Business-to-employee services. They provide their three main target groups - employees, line managers and the HR function itself - with a single point of access to a suite of online HR applications and to an authoritative source of HR policy and guidance.
- **Internet & e-mail policies:** It is essential for employers to develop robust security procedures for their IT systems and to spell out to employees what is considered acceptable and unacceptable in terms of their e-mail and Internet use at work, whether this is for business or personal reasons.
- **Web 2.0 and Social Networking Applications:** Best practice organizations continuously explore new technologies and apply when warranted. Studies have shown that early adopters using social networking for recruiting and branding had double the Sales Growth of those without.
- **Strategic HCM Applications:** Focus new implementation work on strategic HCM applications to improve financial performance. This can be done in the following ways- Deploying an integrated talent management solution to achieve the lowest total cost of ownership possible; Implementing competency management should be at the heart of any talent management strategy; When it comes to business intelligence, first start with a metrics and analytics strategy and then move quickly to implement a solution—middleware to extract, transform, and load data into dashboards usable by decision makers—at the very minimum; Consider adoption of Web 2.0 technologies to increase collaboration within the workforce and increase engagement with remote and Generation Y employees.

A careful analysis and evaluation of the various options available, by an organization planning to introduce e-technology based HR systems, can go a long way in enhancing the effectiveness of such systems.

CONCLUSION

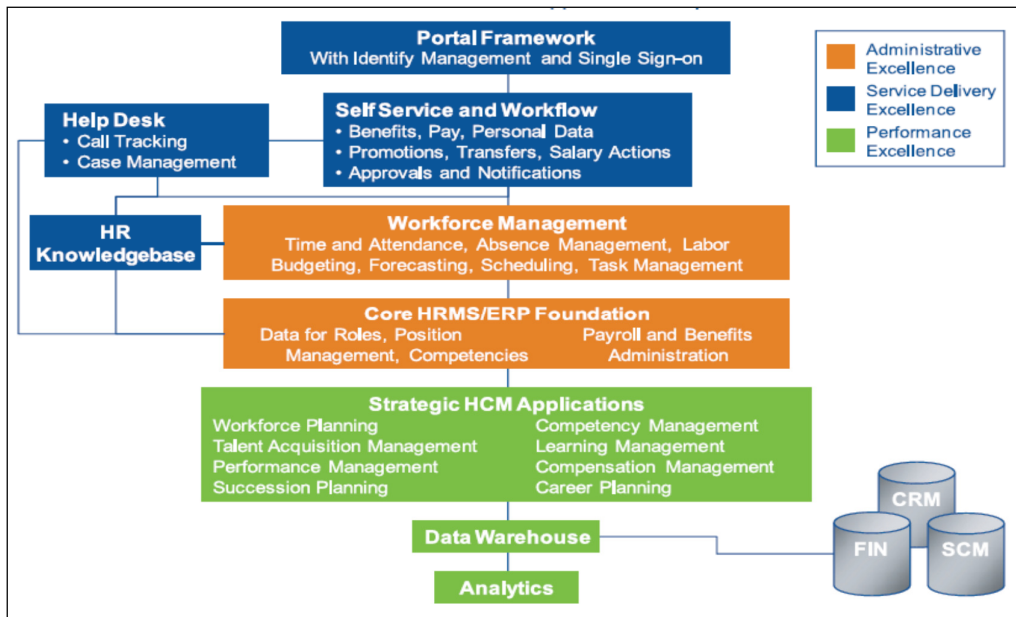
Any e-HRM installation exercise if taken up in the right perspective, keeping all the challenges in mind can take an organization a long way towards success. In companies which have successfully tackled these challenges e-HRM has made life

easier for employees. Not to mention the enhancement in speed and efficiency of Human Resource transactions, lesser paperwork and cost effectiveness in the long run. Increased transparency in functions and a total systems approach has facilitated better control by top management. Some of the considerations for enhancing the effectiveness of e-HR systems include – Creating an effective e-Statement, Standardizing and Centralizing HR administration in an in-house service center, Assessing and ensuring the flexibility of the e-HR technology, e-Recruitment, e-Retirement, Developing Data-mining tools and others.

The fact remains that e-HRM enables better management of every enterprise's most important competitive edge: the thinking, idea-generating, customer-serving human resource. E-HRM eliminates redundant activities, provides more accurate and timely personnel information and – perhaps most important – automates the time-consuming, error-prone Human Resource paper trail. It leaves Human Resource professionals with more time to focus on strategic tasks and manage better the company's most important resource- its people.

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Source: CedarCrestone 2008-2009 HR Systems Survey

Fig. 1-Cedar Crestone model of HCM Excellence for organizations having an ERP-based HRMS as their foundation

Table 1 -Percentage of Respondents- Citywise

Citywise	Percent	Cumulative Percent
Ahemadnagar	0.20	0.20
Aurangabad	2.50	2.70
Jalgaon	0.30	3.00
Jalna	0.10	3.10
Kolhapur	0.60	3.70
Mumbai	67.20	70.90
Nagpur	1.70	72.60
Nasik	1.70	74.30
Navi Mumbai	0.50	74.80
Pune	24.10	98.90
Raigad	0.10	99.00
Sangli	0.10	99.10
Satara	0.20	99.30
Solapur	0.30	99.60
Thane	0.40	100.00
TOTAL	100.00	100.00

Table 2 - Percentage of Respondents by Type of Sector (Services/Manufacturing)

	Frequency	Percent
Services	344	34.40
Manufacturing	656	65.60
TOTAL	1000	100.00

Table 3-Drivers for introducing e-HRM Systems in companies : Mean Ranks

CONSIDERED DRIVERS	Type of Sector					
	Services		Manufacturing		Total	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
a. Increase Integration within the HR function	7.36	2.02	8.54	1.64	8.14	1.86
b. Encourage open communication and sharing of Information	5.42	2.87	7.29	1.82	6.65	2.40
c. Standardize Systems and Procedures	8.15	1.80	3.08	2.26	4.82	3.20
d. Enable HR cost saving and control	1.54	0.92	1.47	0.84	1.50	0.87
e. Reduce time spent on routine administrative tasks by HR staff	4.37	2.11	3.97	1.61	4.11	1.81
f. Better management of data and information	7.04	1.72	6.78	2.36	6.87	2.17
g. Reduce paper transactions	5.27	2.73	3.13	1.05	3.87	2.08
h. Refocus HR staff on strategic activities	7.13	1.85	7.22	1.58	7.19	1.68
i. Increase overall productivity	5.88	2.45	6.70	2.08	6.42	2.25
j. Improve HR transactions accuracy/speed/Integrity	2.79	1.45	6.81	2.11	5.43	2.68

Table 4-The top five drivers for introducing e-HRM Systems in companies

Rank	Services	Manufacturing
1	Enable HR cost saving and control	Enable HR cost saving and control
2	Improve HR transactions accuracy/speed/Integrity	Standardize Systems and Procedures
3	Reduce time spent on routine administrative tasks by HR staff	Reduce paper transactions
4	Reduce paper transactions	Reduce time spent on routine administrative tasks by HR staff
5	Encourage open communication and sharing of Information	Increase overall productivity

1: Most Important; 5:Least Important

Table 5-Usage of e-technology for Human Resource Functions

HR Function	Type of Sector	Percent Implementing the Function	Chi-square	Significance (P-value)	Null Hypothesis
a. Recruitment and Selection	Services	99.5	61.931	0.000	Rejected
	Manufacturing	83.8			
b. Payroll Management	Services	100.0	0.000	1.000	Accepted
	Manufacturing	100.0			
c. Leave Management	Services	100.0	0.000	1.000	Accepted
	Manufacturing	100.0			
d. Attendance Management	Services	100.0	0.000	1.000	Accepted
	Manufacturing	100.0			
e. Manpower Planning	Services	99.5	65.218	0.000	Rejected
	Manufacturing	83.1			
f. Communication	Services	99.1	67.875	0.000	Rejected
	Manufacturing	82.4			
g. Training and Development	Services	100.0	68.543	0.000	Rejected
	Manufacturing	82.3			
h. Performance Management	Services	98.0	68.543	0.000	Rejected
	Manufacturing	82.3			
i. Induction	Services	60.2	323.035	0.000	Rejected
	Manufacturing	7.8			
j. Selecting Benefits	Services	31.9	96.742	0.000	Rejected
	Manufacturing	7.5			
k. Compensation Planning	Services	98.2	800.063	0.000	Rejected
	Manufacturing	8.0			
l. Competency Mapping	Services	32.0	96.742	0.000	Rejected
	Manufacturing	7.8			
m. Career Planning	Services	31.9	96.742	0.000	Rejected
	Manufacturing	7.5			
n. Succession Planning	Services	7.0	18.872	0.000	Rejected
	Manufacturing	1.2			
o. Employee Transition	Services	25.0	5.904	0.009	Rejected
	Manufacturing	17.8			
p. Travel Management	Services	100.0	511.257	0.000	Rejected
	Manufacturing	24.6			
q. Exit Management	Services	7.8	18.872	0.000	Rejected
	Manufacturing	1.2			
r. Maintaining Employee Records	Services	100.0	62.586	0.000	Rejected
	Manufacturing	83.7			

Table 6-Usage of e-technology for HR Functions by Type of Sector (Services vs Manufacturing) – A Comparison

Approx. % of respondents using e-technology	HR Functions	
	Services	Manufacturing
Very High (about 100%)	Recruitment and Selection, Manpower Planning, Payroll Management, Leave Management, Attendance Management, Communication, Training and Development, Performance Management, Compensation Planning, Travel Management and Maintaining Employee Records	Payroll Management, Leave Management and Attendance Management
High (about 85%)		Recruitment and Selection, Manpower Planning, Communication, Training and Development, Performance Management, and Maintaining Employee Records.
Reasonably High (about 60%)	Induction	
Low (about 20-30%)	Selecting Benefits, Competency Mapping, Career Planning and Employee Transition.	Employee Transition, Travel Management
Very Low (about 8%)	Succession Planning and Exit Management.	Induction, Selecting Benefits, Compensation Planning, Competency Mapping and Career Planning.
Negligible (about 1%)		Succession Planning and Exit Management.

Table 7-Usage of HR Service Delivery Tools

HR Service Delivery Tool	Type of Company	Percent using the Tool	Chi-square	Significance P-value	Null Hypothesis
a. Employee Self Service	Services	98.50%	183.648	0.000	Rejected
	Manufacturing	60.30%			
b. Management Self Service	Services	95.00%	444.130	0.000	Rejected
	Manufacturing	29.90%			
c. Web 2.0 Technology	Services	90.70%	689.241	0.000	Rejected
	Manufacturing	13.30%			
d. Intranet	Services	100.00%	101.742	0.000	Rejected
	Manufacturing	75.10%			
e. E-Learning Portal	Services	98.10%	325.307	0.000	Rejected
	Manufacturing	41.10%			

Table 8-Perception of Respondents regarding their company's position in the e-HRM journey today

Rating Scale	Services	Manufacturing	Total
Neither understand nor value e-HRM	% of Respondents		
1	0.00%	3.20%	2.10%
2	0.00%	14.70%	9.60%
3	68.10%	82.10%	77.30%
4	31.90%	0.00%	10.90%
5	0.00%	0.00%	0.00%
Complete incorporation of e-HRM strategy into the business model			

Group Statistics

Where do you perceive your company on the e-HRM journey today?	Type of Sector	N	Mean	Std. Deviation	Std. Error Mean
	Services	344	3.32	.467	.025
	Manufacturing	656	2.79	.480	.019

Independent Samples Test

Where do you perceive your company on the e-HRM journey today?	t-test for Equality of Means		
	t	df	Sig. (2-tailed)
	16.833	709.497	.000

Table 9-Perception of Respondents regarding their company's position in the e-HRM journey after 5 years

Rating Scale	Services	Manufacturing	Total
Neither understand nor value e-HRM	% of Respondents		
1	0.00%	0.00%	0.00%
2	0.00%	3.20%	2.10%
3	20.20%	7.90%	12.10%
4	65.50%	77.70%	73.50%
5	14.30%	11.10%	12.20%
Complete incorporation of e-HRM strategy into the business model			

Group Statistics

Where do you think your company will be in the e-HRM journey after 5 years?	Type of Sector	N	Mean	Std. Deviation	Std. Error Mean
	Services	344	3.94	.585	.032
	Manufacturing	656	3.97	.564	.022

Independent Samples Test

Where do you think your company will be in the e-HRM journey after 5 years?		t-test for Equality of Means		
		t	df	Sig. (2-tailed)
		-.685	670.103	.494

Table 10-Perception of Respondents regarding their company's position in the e-HRM journey today vs 'after five years' – Services group

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Where do you perceive your company in the e-HRM journey today?	3.32	344	.467	.025
	Where do you think your company will be in the e-HRM journey after 5 years?	3.94	344	.585	.032

Paired Samples Test

		t	df	Sig. (2-tailed)
Pair 1	Where do you perceive your company in the e-HRM journey today? - Where do you think your company will be in the e-HRM journey after 5 years?	-14.014	341	.000

Table 11-Perception of Respondents regarding their company's position in the e-HRM journey today vs 'after five years' – Manufacturing group

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Where do you perceive your company in the e-HRM journey today?	2.79	656	.480	.019
	Where do you think your company will be in the e-HRM journey after 5 years?	3.97	656	.564	.022

Paired Samples Test

		t	df	Sig. (2-tailed)
Pair 1	Where do you perceive your company in the e-HRM journey today? - Where do you think your company will be in the e-HRM journey after 5 years?	-55.657	654	.000

Table 12- Barriers to progress in the e-HRM journey: Mean Ranks

CONSIDERED BARRIERS	Type of Sector (Services/Manufacturing)					
	Services		Manufacturing		Total	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
a. Inadequate Financial Resources	3.20	2.73	2.00	1.89	2.41	2.28
b. Resistance to change	7.17	1.85	2.95	1.88	4.40	2.74
c. Lack of top management support	7.13	1.83	7.36	1.81	7.28	1.82
d. Inadequate Training	5.87	2.43	3.18	1.03	4.10	2.09
e. Poor technical infrastructure	7.17	1.63	3.97	1.55	5.07	2.19
f. Issues w.r.t. Security of data	5.72	2.91	6.71	2.27	6.37	2.56
g. Insufficient tangible benefits	3.75	2.64	6.72	2.41	5.70	2.86
h. Lack of innovation	3.27	1.09	6.87	1.86	5.63	2.37
i. Inability to overcome bureaucratic hurdles	8.73	1.44	8.67	1.57	8.70	1.53
j. Difficulty in converting standardized packages into customized and user friendly modules	2.96	1.49	6.55	2.41	5.32	2.74

Table 13- The top five Barriers for Services vs Manufacturing groups

Rank	Services	Manufacturing
1	Difficulty in converting standardized packages into customized and user friendly modules	Inadequate Financial Resources
2	Inadequate Financial Resources	Resistance to change
3	Lack of innovation	Inadequate Training
4	Insufficient tangible benefits	Poor technical infrastructure
5	Issues w.r.t. Security of data	Inability to convert standardized packages into customized and user friendly modules

1: Most Important; 5:Least Important

Table 14-Expectation of respondents w.r.t. e-HRM being successful in satisfying employees in their HR needs

Opinion	Services	Manufacturing	Total
	% of Respondents		
YES	89.18	71.30	77.43
NO	4.68	5.34	5.12
Can't Say	6.14	23.36	17.45

Chi-square= 47.64 df=2 P<0.0001

Table 15-Expectation of respondents w.r.t. the benefits from e-HRM justifying the expenditure on the same

Opinion	Services	Manufacturing	Total
	% of Respondents		
YES	96.2	49.31	65.4
NO	2.34	30.08	20.56
Can't Say	1.46	20.61	14.04

Chi-square= 218.27 df=2 P<0.0001