CHAPTER-2

LITERATURE REVIEW

With the idea of research in human resource management and finalization of area, electronic human resource management (e-HRM), the next step was review of literature for having a basic framework for formulation of possible constructs. E-HRM literature review is the most important aspect of the research as it provides the base and assesses the information and work done by predecessors in this area, thus identifying the research gap. The focal point of this literature review is to recapitulate and amalgamate the arguments and ideas of other researchers about e-HRM. Since evolution of e-HRM as a research topic, lot of researcher has contributed in this field. Present study has classified and compiled the related literature with a specific heading so that literature review is logical and meaning could be derived out of it.

2.1 E-HRM Domain- According to Broderick and Boudreau (1992) “human resource information systems (HRIS) as the combination of data centric computer applications and hardware and software that are required to compile, document, store, manage, deliver, present and contrive data for human resources”. Lepak and Snell (1998) used the wording, “virtual HR” to express a network-supported arrangement built on partnerships and mediated by information technologies to help the institution, obtain, develop, and set up intellectual capital.

Wright and Dyer (2000) propagate most important motive of development of e-HRM is e-business. According to them e-business is upcoming and as a result HR and HR practitioners are faced with the challenge of delivering in ways that are in line with the business. In their opinion, HR functions become decisive partners in driving success, but to do so needs that HR alters its focus, its role, and its delivery systems, thus in e-business, the application of intranet technology for HR is unavoidable. In the opinion of Noel, et al. (2000), electronic human resource management (e-HRM) implies processing and communication of digitized information used in HRM, together with text, audio, video, visual images, from one computer to a different electronic appliance. Workforce does not have to be in the same geographic location to work collectively.
As per Gowan Mary (2001) “electronic human resource management system (e-HRM System) is a net-based solution that takes benefit of the latest internet technology to perform an online real-time human resource management solution and it is all-inclusive but easy to use, full of latest features, yet flexible enough to be customized to one’s specific necessitates”. As per Walker (2001), the term e-HRM is widely used but a unanimously accepted definition is still undecided. It is over and over again used tantamount with like terms such as web-based human resources. E-HRM is also seen as a compilation of facts, principles and best-practice approaches to effective human resource management. Adam and Van Berg (2001) states, e-HRM is using web-based technologies (internet, intranet, extranet, portal ) for the best of human resource management that reduces the administrative work, gives the chance to workers to plan their career dynamically, giving the management the prospect to take well founded resolutions and improving the effectiveness and efficiency.

Kovach, et al. (2002) define e-HRM as web-technology-based conduit; offer the managers and the workforce of the organization with information as well with the capability to finish HR-related transactions. As per Watson Wyatt Research Report (2002), e-HR implies the broad access to human resources data, instruments and operations available directly on the web in most offices today. It illustrates the "net effect" of the outburst in web technologies and the striking impact this growth has had on the way workforce now obtain employment-related information via integrated self-service applications. It also contains amalgamation of new technologies available that help connect numerous systems, tools and databases, both within and outside the organization.

In other Watson Wyatt (2002) survey of 649 US organizations accepted the definition of business to electronics (B2E) as the application of any technical knowhow, facilitating managers and employees to have direct access to HR and other workplace services for communication, performance, reporting, team management, knowledge management, and learning in addition to administrative applications. Centred on swiftly developing web technologies, recent web-based HR practices cover a fully incorporated network of HR-related data, tools and transactions.
According to Lengnick-Hall and Moritz (2003), where HRIS were directed to help the HR experts in delivering their HR tasks, electronic HRM (e-HRM) applications are, beside directed to carry HR professionals in performing their HR tasks, and also directed to support managers and employees in completion of their HR jobs. E-HRM implies to conducting business transactions - in this case HR - using the internet.

E-HRM as defined by Kettley and Reilly (2003) “is a computerized human resource information system (CHRIS) and consists of a fully integrated, company-wide network of HR related data, information, services, databases, tools and transactions and such a system can be described as e-HR, meaning the use of traditional, web and voice technologies to develop the HR administration, transactions and process deliverance”. According to Hendrickson (2003), as within other organizational functions, information technology has become a significant process for supporting the processes of the HR function and the HR function is now closing the gap in terms of applying new IT capabilities to traditional functions.

As per Bulmash, J. (2004), human resource technology can be elaborated as any technical knowhow that is used to attract, recruit, retain, and maintain human resources, facilitate HR administration, and optimize HRM. This expertise can be used in various types of human resource information systems (HRIS) and by different stakeholders, such as executives, operates, and HR professionals. As per Bondarouk, T. et.al. (2004), tentatively “e-HRM as an approach of executing human resource management (HRM) strategies, policies and practices in establishments through a deliberate and directed support of, and/or with the full use of, web-technology based channel”. Bondarouk and Ruel, (2006) expanded this definition in later work to include the communication component of e-HRM, where employee and employers, through e-HRM, are able to communicate about HR content more effectively According to latest definition, Bondarouk and Ruel, (2009), e-HRM as an umbrella term encompassing all possible integration mechanisms and contents between HRM and information technologies, intending at creating value within and across organization for targeted workforce and management.
Van den Bos and Van deer heijdeen (2005) states electronic human resource management system (e-HRM) is to facilitate human resource management through application of web technology. According to Uman ID (2006) electronic human resource management system (e-HRM) is revamp and automation procedure by which the HRM function can pay attention on delivering value to the business. It is a perception through which HR information and process support self-service mode of service delivery, and is made accessible over the internet or intranet so that workforce can utilize and inform. Strohmeier (2007) states, e-HRM is the planning, execution and implementation of information technology for both networking and supporting at least two people or unified actors in their shared performing of HR actions. According to Voermans and Veldhoven (2007), e-HRM could be intently defined as the administrative support of the HR department in business by using internet technology, but also emphasise the significance of understanding that the beginning of e-HRM may lead to alteration in fact and positioning of the HR function.

As per Olivas-Lujan et al. (2007) e-HRM is not a totally fresh thought and has been in application since the early 1990s when the thought of e-commerce swept across the organisation. According to Shane (2009) electronic human resource management system (e-HRM) is seen as the connection between human resource management and information technology. It combines HRM as a discipline and in particular it’s basic HR activities and processes with the information technology function. According to Varma (2010), in cases where a business deliberately and in a focused way prefers to put in place web technology for HRM purpose, based upon the thought that management and workforce should cooperate and play an active role in delivering out HR work, we can have a thought of e-HRM.
<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Broderick and Boudreau, 1992</td>
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<tr>
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<td>Virtual HR, to express a network-supported arrangement built on partnerships and mediated by information technologies to help the institution, obtain, develop, and set up intellectual capital</td>
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<tr>
<td>Author</td>
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<tr>
<td>Lengnick-Hall and Moritz</td>
<td>2003</td>
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<td>2004</td>
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<td>Bondarouk &amp; Ruël</td>
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<td>Van den Bos &amp; van der heijdeen</td>
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<td>Bondarouk &amp; Ruël</td>
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<td>Uman ID</td>
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<td>Strohmeier</td>
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<td>Bondarouk &amp; Ruël</td>
<td>2009</td>
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<td>Varma S</td>
<td>2010</td>
</tr>
</tbody>
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Source- Literature review by scholar
2.2 Types/Levels of e-HRM - Lepak and Snell (1998) made difference in HRM services, namely operational HRM, relational HRM and transformational HRM. Wright and Dyer (2000) made a parallel dissimilarity in service delivery of HRM services named as transactional HRM, traditional HRM, and transformational HRM. Martin et al. (2008) emphasized that e-HRM can be classified as per three perspective namely operational HRM, relational HRM and transformational HRM. Same was vindicated by Bondarouk and Ruel (2006) as well as Strohmeier (2007) and they identified different types of e-HRM and referred to them as end result. These end result included operational, relational and transformational.

Lengnick-Hall and Moritz (2003) view e-HRM development slightly differently to other authors. They purport that e-HRM develops through three main waves within an organisation. The most simplistic form of e-HRM is all about publishing information. The next higher level of e-HRM involves the automation of transactions, and the most complex level of e-HRM concerns the transformation of how human resource practices are conducted in the organisation.

As per Bieasalski (2003), e-HRM offers opportunity to automate administrative HR-task and to optimize value creating HR-activities. Three levels of development can be distinguished as web-presence HR, web-enabled HR, web-energized HR. The first level “web presence” means that parts of the e-HRM-solution are present. Web-enabled means that all parts of the e-HRM solution are present and can be availed online. The third level describes more proactive e-HRM-solution that is fully implemented, can be accessed online and is used optimally by employee.

<table>
<thead>
<tr>
<th>Researcher</th>
<th>year</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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<tbody>
<tr>
<td>Lepak &amp; Snell</td>
<td>1998</td>
<td>Operational</td>
<td>Relational</td>
<td>Transformational</td>
</tr>
<tr>
<td>Wright &amp; Dyer</td>
<td>2000</td>
<td>Transactional</td>
<td>Traditional</td>
<td>Transformational</td>
</tr>
<tr>
<td>Lengnick-Hall &amp; Moritz</td>
<td>2003</td>
<td>Publishing</td>
<td>Automation</td>
<td>Transformation</td>
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<tr>
<td>Bieasalski</td>
<td>2003</td>
<td>Web-presence</td>
<td>Web-enabled</td>
<td>Web-energized</td>
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<td>Bondarouk &amp; Ruël</td>
<td>2006</td>
<td>Operational</td>
<td>Relational</td>
<td>Transformational</td>
</tr>
<tr>
<td>Strohmeier</td>
<td>2007</td>
<td>Operational</td>
<td>Relational</td>
<td>Transformational</td>
</tr>
<tr>
<td>Martin, Reddington &amp; Alexander</td>
<td>2008</td>
<td>Operational</td>
<td>Relational</td>
<td>Transformational</td>
</tr>
</tbody>
</table>

Source – Literature review by scholar
From table -2.2 it is obvious that there is unanimity among the researcher regarding level of e-HRM as operational, relational and transformational, as originally conceived by Lepak and Snell (1998).

2.2.1 Transactional/Operational/Web-presence HRM- As per Lepak and Snell (1998), operational human resource management is concerned with streamlining processes. It engages basic administrative HR actions such as compilation of personnel data, payroll, publishing of information, which was earlier face-to-face now, offered through web-based technology. According to Bondarouk and Ruel, (2006) “for operational HRM, the establishments requires to decide whether or not workforce will keep their own personal information up to date via HR website, or whether this will be done physically/manually by administrators”. As per Shane (2009) the one-way communication from the organisation to its staff is characteristic of the first form of e-HRM, which engages merely publishing information. Intranets are the prime information delivery means for this and incorporate generic content such as the organisation’s policies and actions and measures. This is time and again expanded to inculcate more personalised information such as vacancies. This type of e-HRM is in itself particularly valuable to establishment as it allows for more cost-effective spreading of information by cutting down on printing costs. Alteration to information can be uploaded as and when required so that users can access up-to-date, pertinent information when required.

2.2.2 Traditional/Relational/Web-enabled HRM- According to Bondarouk and Ruel (2006), “with relational HRM, there is a choice of whether to perform additional intricate HR practices, like recruitment and selection using e-HRM, or to use a more conventional paper-based approach such as newspaper advertisement and paper-based application form”. According to Strohmeier (2007), relational HRM concerns the interface and networking of the different HRM stakeholders. As per Lengnick-Hall & Moritz (2003), relational e-HRM also engages the automation of transactions (internet in place of pen and paper) through application of intranets and extranets, HR portals, employee self-service and manager self-service, and operates with numerous application programmes. These technologies develop relationships between users of the systems. As per Bondarouk and Ruel, (2006), the stress of relational HRM is not on the administration of HR processes, but rather on the mode in which HR tools carry basic business
processes such as performance management and recruitment and selection. The relational HRM, deals with more advanced HRM activities is viewed as the second, more complex form of e-HRM. The stress here is not on administering, but on HR instruments that support fundamental business processes such as recruiting and the selection of new staff, training, performance management and appraisal, and rewards.

2.2.3 Transformational / Web-energized HRM - Transformational HRM is the top-level and the most multifaceted form of HRM. According to Lengnick-Hall and Moritz, (2003), HRM shifts from a transactional to a transformational focus, whereby the human resource functions are relieved of the operational duties and redirected en route for more strategic capability. These types of job contain: strategic partnering with the business, developing centres of proficiency and administration of service centres. According to Bondarouk and Ruel (2006) “when using e-HRM for strategic, transformational purposes, it is probable to form a change-ready work force via an integrated set of web-based tools that enables the personnel to grow in line with the organisation’s strategic choices”.

2.2.4 Implementation Pattern of e-HRM - According to Wright and Dyer (2000), more recently, HR function has had to play a more strategic role in the business. The only way to attain this is to reduce much of the burden of transactional human resource activities. In order to free up time so that HR can focus on transformational HR activities, expansion and execution of human resource-specific information technology systems is the first step to attain this. Other options available is outsourcing some of the human resource function, but what would be more appropriate to this study, is to utilize information technology in the shape of e-HRM (see Figure -2.2). In addition to this, new systems have been developed that permit management and staff to manage much of their own human resource actions, such as leave application and approval, personal data alteration etc. Thus, e-HRM systems aid in freeing up time for the HR function so that there can be greater emphasis on high-value strategic project
FIGURE- 2.1: Traditional Delivery of HR Services

Source- compiled by scholar

The figure 2.1 and figure 2.2 shows paradigm shift in outlook of HRM function in service delivery from traditional to strategic and time devoted in each level of HRM. From the figures it is fairly clear as HRM function moves to strategic delivery approach, it dedicates less time in operational or primitive level of HR function and maximum time on transformational or highest level. With strategic delivery approach organizations some time reengineer their HR function, opt for outsourcing, and ride on electronic platform and in most cases applies all the three options simultaneously.
According to Bondarouk, T. et al. (2004), “an important feature to keep in mind, is that in reality, a combination of these types of e-HRM are utilised”. Actually E-HRM growth is not a gradual process. Different levels of e-HRM execution are not a mutually exclusive activity but some time at the same time all the three levels are being implemented simultaneously. However, the authors comment that establishing a good transactional foundation is an important basis for relational e-HRM, and effective relational e-HRM should be in place for successful transformational e-HRM. According to Lengnick-Hall & Moritz (2003), while some establishment might take a developmental approach, building up from operational, to relational
to transformational e-HRM in a step-by-step manner, other organisations will make more forceful alterations, moving straight from operational e-HRM to transformational, strategic e-HRM. It seems that the first step in thriving e-HRM is ensuring that decision-makers buy into the fact that the benefits compensate the costs. As per Shane (2009), three types of e-HRM are often used concurrently. Organizations will have elements from each of the types of e-HRM, but in an ideal world, each stage should be developed incrementally, that is, a strong operational basis will enable improved relational e-HRM, which in turn will be advantageous for purposeful transformational e-HRM.

2.3 Delivery Tools/ Instruments-According to Kettleley and Reilly (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 and the nature of the development path, however, varies considerably from organization to organization”. Kavanagh and Thite (2008) reported that to improve effectiveness and efficiency in terms of service delivery, cost reduction and value-added services, HR departments came under pressure to harness technology that was becoming cheaper and more powerful. Sanayei and Mirzaei (2008) in empirical study aim at providing an explanation of e-HRM and introducing its activities and tools, after the investigation, the effect of various independent variables such as job satisfaction, professional commitment, and organizational commitment on the effectiveness of HRM as a dependent variable. E-HRM tools such as intranet, extranet, HR portals; integrated HR suite software is rarely used, however according to expert's judgment if they are used, they would have a positive effect on HRM output in Iranian organizations. As per Florkowski and Olivas-Lujan (2006) “diffusion patterns of eight information technologies that are transforming HR service-delivery in North America and Europe are HR functional applications, integrated HR suites, IVR systems, HR intranets, employee and manager self-service applications, HR extranets, and HR portals”. The overall diffusion was best characterized as an outgrowth of internal influences, fuelled primarily by contacts among members in the social system of potential adopters. Companies in the 21st century can be broadly said to have adopted at least one of the above mentioned e-HRM technologies.
Foster et al. (2004) describe that the application of the internet to the human resource function combines two elements; one is the use of electronic media while the other is the active participation of employees in the process. As per Bondarouk, T. et al. (2004) “organisations need to embrace the e-HRM revolution which relies on cutting edge information technology, ranging from internet-enabled human resources information systems (HRIS) to corporate intranets and portals”. According to Biesalski (2003), e-HRM “is a web-based tool to automate and support HR processes”. Kettley and Reiley (2003) states that a computerized human resource information system consists of a fully integrated, organization wide network of HR-related data, information, services, databases, tools and transactions. Technology has only recently developed in a way that enables e-HR to make its mark, especially the introduction of corporate intranets and web-enabled HRIS. According to Lengnick-Hall, and Moritz (2003), “the final stage of total digitalization’ in the 1990s arrived when HR professionals and ICT specialists joined forces and developed electronic information systems that moved HR decision making from drawers to computer”.

As per Watson Wyatt’s (2002) survey of HR technology issues revealed that a wide variety of HR and payroll systems are being used today. According to the results of the study, web technology is the predominant method for delivering HR-related services to employees and managers, and offers significant opportunities to improve communication, knowledge sharing and HR delivery systems In the views of Wright, M. et al. (2001), “e-HRM refers to the processing and transmission of digitized information used in HRM, including text, sound and visual images, from one computer to another electronic device”.

2.3.1 HR Functional Application (HRFA) – According to Florkowski and Olivas-Lujan (2006), HRFA are software-enabled automation of separate jobs and responsibilities to the HR department. Application software is a defined subclass of computer software that utilizes the competence of a computer directly to a duty that the user wishes to execute. An HR functional application implies software for a particular action or group of actions. Most common functional applications existing for the diverse tasks are benefits administration, personnel tracking and payroll, recruitment and selection, leave and attendance, payroll, benefit management, Performance appraisal, labor relations advisory, occupational health and safety module. As stated
by Doughty (2000), today, within the HR software market there are a myriad of HR systems, payroll, training administration, 360 degree feedback, psychological testing and competency software tools operating in their own software features.

**Figure-2.3: HR Software Application Functionality**

<table>
<thead>
<tr>
<th>Reward &amp; Benefit Administration</th>
<th>Time - Office Leave &amp;Attendance</th>
<th>Applicant Tracking System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Tracking</td>
<td>Scheduling of Work Force</td>
<td>Performance Review</td>
</tr>
<tr>
<td>Payroll</td>
<td>Employee Management</td>
<td>Learning/ Knowledge</td>
</tr>
<tr>
<td>Foundation/Core HR</td>
<td></td>
<td>Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transformational/ Strategic HR</td>
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</tbody>
</table>

Source- compiled by scholar

As per Software Advice (2014), foundation/core HR includes the three traditional human resources management functions: reward and benefit administration, employee tracking and payroll. Employee management, scheduling of workforce, leave and attendance also comprises the range of software solutions intended to effectively plan and track the employee and include applications to track time and attendance, monitor conformity with labor laws, and usually include payroll functionality, or integrate well with other payroll software. Strategic HR includes growing company by attracting and developing the best people, as well as better managing employees overall. Strategic HR applications usually present some arrangement of applicant tracking and recruiting, learning management, as well as performance evaluation functionality. This type of software reorganizes these strategic processes to guarantee that a company is using its employee as efficiently as possible, and also that employees are abiding to grow and develop by increasing employee satisfaction and retention rates.

**2.3.2 Integrated HR Software Suite Application (ISA) –** As per Wikipedia (2014) integrated software is that combines the most frequently used functions of many productivity software programs into one application. According to Florkowski and Olivas-Luján (2006) ISA is
numerous applications clubbed together as a package are called as an application suite. The disconnected applications in a suite typically have a user interface that has some commonality making it easier for the user to learn and use each application. And often they may have some ability to interact with each other in ways beneficial to the consumer. Integrated software suite application (ISA) can be compared with system software which is occupied in integrating a computer’s diverse capabilities, but typically does not directly relate them in the performance of jobs that benefit the users. ISA delivers business intelligence with analysis including, online analytical processing (OLAP), data mining, extract, transformation, and data warehousing, and reporting. This helps attain optimum levels of capability and providing total control of all HR portions by integrating all organization and staff data to offer information on every aspect of the operations right from staff policies to payroll processing. This also create all-inclusive reports that extend the entire spectrum of the database.ISA has lot of influence over HR functional application like, improved navigation, flexible functionality, simplified data management, efficient communications, integrated reporting, and shared environment and speed to value. As per Software Advice Portal (2014), of course, core HR personnel management and strategic HR functions often have common characteristics. While there are best-of-breed solutions for individual functions in every team, there are also integrated suites boasting across-the-board functionality.

2.3.3 Interactive voice response (IVR) – As per Webpedia (2014), interactive voice response, is a communication technology in which somebody exercises a touch-tone phone to interact with a database to obtain information or go through data into the record. IVR technology does not need human interface over the phone as the user's interaction with the database is programmed by what the IVR system will permit the user access to. As per Wikipedia (2014) interactive voice response (IVR) is a technology that permits a computer to network with humans through the use of voice and dual-tone multi-frequency-signaling (DTMF) tones input via keypad. Florkowski and Olivas-Luján (2006) states IVR system directs telephone calls involuntarily to targeted receivers or footages by pressing touchtone buttons. IVR permits workforce to network with a company’s host system via a phone keypad or by tongue recognition, after which they can service their own exploration by following the IVR conversation. HR function afterward influences this technology to assist telephone-driven utilization of such services as benefits.
enrolment, training enrolment, employee declaration, work-related studies etc. External parties and organizations are also able to confirm employee standing or income levels by calling the suitable numbers. IVR helps in automation of processes, serve staff after standard business hours, improve worker service, lower call centre costs, and prioritize workers, so pressing calls are handled speedily.

2.3.4 HR intranet applications (HRIA) – As per Weidenhammer (2013) “an intranet generates a single, protected warehouse for all confidential human resources information and procedures”. It can offer an easy-to-navigate environment that is reachable by all workforces, despite where they are located or which computing platform they are using. Employees have instant admission to the most recent information. An intranet can help workers swiftly find the information they need. Employees aren’t overwhelmed by burdensome instruction booklets, and they save time searching because they don’t have to wade through pages of inappropriate information. To make things even more efficient, workforce can enter data online. This data can be involuntarily integrated into back-end information systems, so it can be validated on input, eliminating errors. In addition, the human resources staff does not have to re-enter employee data, freeing time for other more vital tasks.

According to Florkowski and Olivas-Lujan (2006) HRIA is private computer network that provides workers with direct entry to link internal database and/or a seamless interface with the internet. It is a network intended to systematize and share information and bring out digital business dealings within a company. An intranet utilizes applications linked with the internet such as web pages, browsers, e-mails, newsgroups and mailing lists but is available only to those within the business. HR Intranets offer the most innovation to HR departments since the beginning of the desktop computer. As per Sanayei and Mirzaei (2008), “as intranet usage proliferated worldwide opportunities emerged to utilize e-mail and electronic-form software to reduce the costs of data entry for payroll, benefits administration, training administration etc”.

Rodgers, K. (2009) purports, the term HR intranet means diverse things to different people, but it’s really about using your internal IT network to converse and work together. An HR intranet generally supplies self-service access to your central HR systems so managers and staff can input
individual data and transmit out transactions online, such as booking training courses. Some firms also have sophisticated workers portals on the front – a sort of internal home page where workers go to log on to different IT systems and get information. HR self-service capability is typically provided as an add-on to your HR management system.

HR intranet assists improvement in data quality, empowerment of employee, decline in paper consumption, streamlining process, quick spreading of valuable information on a wide range of topics, enable employee to perform various task, links employee and standardizes HR practices.

2.3.5 Self-service (SS) Application- As per CedarCrestone HR Systems Survey Report (2013–2014) with self service 10% additional workforce can be served and 41% more workforce can be served with self service and shared service when compared to service delivery tools without these technologies

Figure-2.4: Self Service and Shared Service (Service Delivery worth)
Self-service application can be broadly classified in two ways.

2.3.5.1 Employee Self-Service (ESS) Application- As per Ulrich (1997), “while attempting to make strategic changes within the human resource function, HR professionals must still bring good HR services to their stakeholders who include employees and managers”. One of the most important elementary beliefs in managing human resources is promoting employment relationship so that workforce may feel connected to their work and contribute willingly to the success of the organization. As per Keebler & Rhodes (2002), there is acceptance of the fact that the workforce of a business is just as important as its clients, and therefore need to be kept satisfied and motivated. This can be obtained by improving HR service delivery. According to Kettley P, and Reilly P (2003), before embarking on e-HRM, companies should evaluate and optimize their business methods. This may be a case of major process revamp, or a more tactical workout handling areas of worry. Following a process review, a common next step is to introduce a form of self service. This is likely to engage employee self service, where staff can access their personal file and update it or add new information. Keebler & Rhodes (2002) go on to argue how, while improving HR efficiencies is the major focal point in e-HRM technology devise, it should also support in making e-HRM technology more client-friendly. This should enhance the service experience of the managers and staff. In this way, a client service progress of the HR system can be achieved.

Florkowski and Olivas-Lujan (2006) mentions ESS is a software-facilitated set of HR dealings that can be initiated and completed without direct involvement of HR staff. It is a web-based application tool that provides employees with access to their personal records and their payroll details. It enables employee self-service and provides access to a comprehensive employee database. The employee database acts a centralized repository of vital employee related information made available to HR, workforce and executives. Its inherent employee self-service
capabilities ensure that this data remains current without tedious data entry by HR. The employee self service is the stand on which all other functional modules can be added to create a complete employee self service based HR system. The employee self service play an important role in working time and schedule, individual information, training and performance management, life events, benefits, careers, time off from work. With ESS employee can view and avail pay slips, abstract of year’s earnings and deductions, loan statement, PF statement, settlement statement, income tax (IT) declaration, statement and calculator, reimbursement claim workflow, ticketing, leave workflows.

**FIGURE-2.5: ESS- In Nut-Shell**
2.3.5.2 Manager Self-Service (MSS) Application - According to Adamson and Zampetti, (2001), “the objectives of manager self-service include improvement in the delivery of HR services, elimination of process steps, approvals and forms, speeding up and streamlining of workflow, reduction in administrative costs, improvement in management’s access to important information, providing more time, and finally, enabling strategic HR”. Manager self service provides managers with the tools needed to efficiently perform employee administration, as well as the information needed to help employees improve performance and enhance their skills. Manager self service transforms managerial activities from manual, paper-based processes with multiple levels of approval to a web-enabled, self-service system, it allows both managers and employees to stay focused on improving performance and simultaneously minimizes unnecessary human resources involvement in manager-employee interactions, increasing organizational efficiency.

As per ADP Employease (2013), it has been seen that line managers are irritated by the fact that they are one step behind from information or they have only secondary information not primary. Manager self-service puts the information managers need at their fingertips giving them the ability to more closely monitor and direct their team towards the strategic goals of the organization. Manager self-service application leverage its utility in employee information, organization and staffing, employee time and schedule, employee leave and stability, evaluation of employee competencies, compensation management, timely performance reviews and development processes. It also facilitates new-hire initiation, reporting, competency gap analysis, employee training and development, automated workflows, organization charts, status changes, review and approval of timecards and leave requests, budget and cost centre, delegation of authority at the appropriate level and time, project management, administration, PF funds & gratuity management.
According to Ketlley P, and Reilly P (2003), “manager self service is usually a logical development, allowing the sign-off of various decisions or proposals and redesigning the HR function with impact on the roles and skills of HR staff”. There will be many areas of upskilling as the move away from transactional work gathers pace. This will stretch the capability of staff, not just in terms of technological facility but also in customer and relationship skills. As per Florkowski and Olivas-Luján (2006), “MSS is a software-enabled set of HR transactions by managers that can be initiated and completed without direct involvement of HR staff”.

2.3.6 HR Extranet Application (HREA) – As per Murugan et al. (1988), “extranet is the electronic computer-to-computer transfer of information in a planned format that can occur between business trading partners, vendors and between various units within an organization”. According to Florkowski and Olivas-Luján (2006), HREA application is a private computer network that connects the information system of client-firms to external merchants delivering co-sourced or outsourced HR service. HR extranets really act as conduits for electronic commerce between client firms and HR merchants or a business-to-business (B2B) market for HR services. Two different business models can administer these associations. In the first one, the HR function shares workforce data with merchants who use the information to effectively manage HR services under their stewardship. Lacking authorization to communicate with vendors, employees continue to go to their employer to renew service choices, revise personnel records, and voice complaints about services rendered. The second model saddles merchants with broad accountability for database management and service administration. Here, employees use the extranet to directly initiate or modify service delivery from external suppliers.

Flanagan (1997) state, extranet assists the swap and processing of high volumes of data from one computer to another. Extranets have been used by workforce to communicate with merchants, service providing partners, and various other audiences who contribute to the operating efficiency or to the bottom line. As per HRCentral.net (2013), HR extranet has application with staff training, management training and coaching, legal compliance, salary, benefit and payroll administration, personnel file, health and safety programs, unemployment claims management etc.
2.3.7 HR portal applications (HRPA) – As per Microsoft business solution (2012) a portal is an integrated place that join people to contextually pertinent information, services, and applications. Accordig to Florkowski and Olivas-Luján (2006) “HRPA is website interaction that offers a personalized unified access point to all information sources, devices, and systems individual needs to effectively consume or deliver HR services”. The range of work-related data and actions that one can link to is role driven. In some instances, employees have the ability to interact directly with external merchants feeding to personal needs and interests. Portals are highly configurable through code modules. As per Microsoft business solution (2012) HR portal can afford HR-related substance and applications to those who need it—those assigned to the staff, manager, payroll administrator, and human resources administrator roles.

As per Quikker (2008) HR portal solutions offer entrée to additional process based tools and applications that facilitate staff to achieve major efficiencies in their work and HR Portal now becomes a habitual tool for employees to manage all of their work related tasks, from requesting a holiday; through managing their performance and development, as well as providing access to improved communication tools to enable collaboration. Through better understanding of organizational objectives, and how they can contribute, staff becomes more engaged and aligned and more productive. The capability for integration offered by HR portals represents another shift in value by protecting existing investments in systems and processes. With an HR portal ‘synchronized’ to other systems within the business it now becomes the single point of integration for company information and presents an option for employee self service – single sign-on /single data-entry.

HR Magazine, editorial content (2010) states personalization, online decision support, tools designed to help workers compare benefits plan features, realize insurance coverage relating to specific events and estimate medical costs while enrolling via portals is highlights of portal application. HR portal give employee a consultant while reducing the volume of e-mail and calls to HR staff members for help with benefits decisions. Video is also playing a more prominent role on HR portals. Latest portal is helpful for member of staff to be able to navigate to all of those areas seamlessly to complete transactions without receiving multiple login prompts. As HR portals continue to progress, many experts say the subsequent wave will feature social
networking-type tools that promote workforce to share proficiency, join communities of practice or connect in other ways. Kluemper, D and Rosen, P. (2009) states, indeed, social media, or web 2.0 as a lively set-up has been suggested by some scholars to be the budding technology that will have a major effect on HR. Firestone (2003) states HR portals are vehicles through which HR information and applications can be channelled effectively and efficiently. As per Cascio (2000) and Collins (2001), through HR portals, employees can update own administrative activities and may have also have right of entry to customized and personalized news, resource applications, and e-commerce options. Through HR portals managers can proficiently create reports, scrutinize employee activities and supervise their own activities.

Table-2.3: E-HRM Tools at a Glance

<table>
<thead>
<tr>
<th>Tools</th>
<th>End-user</th>
<th>Purpose</th>
<th>Common features</th>
<th>Activities for end-users</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRFA</td>
<td>HR staff</td>
<td>Software-enabled automation of discrete jobs and responsibilities to the HR function.</td>
<td>Lack of uniting parameters across software products</td>
<td>Keeping personnel details, administration, monitoring in line with human resource planning, recruitment and talent management and other life event objectives</td>
</tr>
<tr>
<td>ISA</td>
<td>HR staff Internal customers (if self-service apps implemented)</td>
<td>Compilation of human resource functional applications traded as unit</td>
<td>Ability to share data among applications. Each functional application is full-featured and can stand alone</td>
<td>Management of life events from hire to retire Talent management, Performance management Stakeholder management</td>
</tr>
<tr>
<td>IVR</td>
<td>Internal + External applicants</td>
<td>Software facilitated phonetic configuration that permits callers to contact work-related information and/ or input data through audio or telephone-keypad instructions.</td>
<td>Electronic voice mail Data-entry ability to support select HR activities or to respond to organization surveys</td>
<td>Access company announcements, Benefit-plan enrollment, Training registration, Applicant testing and elementary bio-data compilation, Employment/income authentication by certified external parties</td>
</tr>
<tr>
<td>HRIA</td>
<td>Internal + External applicants</td>
<td>Private computer network that offers workforce with direct entrée to linked internal database and/ or a seamless interface with the internet.</td>
<td>Online publishing of policies, brochures and forms, Online postings of employment vacancies</td>
<td>Review of staff information in HR databases, Online tracking of retirement-plan performance, Online assessment of potential health care providers for benefit plan determinations</td>
</tr>
<tr>
<td>Tools</td>
<td>End-user Purpose</td>
<td>Common features</td>
<td>Activities for end-users</td>
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<tr>
<td>-------</td>
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</tr>
<tr>
<td>ESS/MSS</td>
<td>Internal customers</td>
<td>Software-facilitated set of HR transactions that can be started and accomplished without direct association of HR staff.</td>
<td>Highly configurable regarding the range of automated HR transactions, Role-inhibited access to particular HR transactions</td>
<td>Directly updating individual information in HR databases, Online proficiency testing and training listing, Creating, following, and administering open job request, Granting base-remuneration increase and tracking decisions against sanctioned budget</td>
</tr>
<tr>
<td>HREA</td>
<td>HR staff + Internal customers (if Authorized)</td>
<td>Private computer network that connects the information system of customer-firms to external sellers conveying co-sourced or outsourced HR service</td>
<td>Firewalls restricting external access to &quot;shared &quot;HR&quot; data</td>
<td>Updating individual information alteration in databases managed by outer merchants, Online oversight of medical helps, annuity administration</td>
</tr>
<tr>
<td>HRPA</td>
<td>Internal customers HR staff</td>
<td>Website interface that provides a tailor made unified entre point to all information sources, tools, and systems person requires effectively consuming or delivering HR services.</td>
<td>Role-confined right to use data stores, applications and systems</td>
<td>Online shopping for discounted offerings from a pre-configured network of exterior goods and service merchants</td>
</tr>
</tbody>
</table>


2.4 Strategic Orientation- Lepak & Snell (1998) argue that the true value of the HR function is when it helps the organization to achieve competitive advantage, for example, through the development of core competencies. Human capital, according to Walker (2001), is the last remaining competitive advantage in business. In order to gain a competitive advantage, the way in which these human resources are managed has a need to change. As per Rowden (1999), the paradigm shift from the administrative aspects of HRM led to the emergence of strategic HRM as a new generation of value-added core responsibility or function of HRM. According to Lawler & Mohrman (2003), the HR function can and increasingly is making significant contributions to building an organization that is staffed by the right human capital to carry out the work of the firm and enable the accomplishment of business strategy.
As per Wei (2006), strategic HRM reflects a more flexible arrangement and utilization of human resources to achieve organizational goals, and accordingly helps organizations gain competitive advantage. According to Foster (2009), the role and activities of the HR function in an organization are likely to be strongly influenced by the organization’s competitive strategy. For example, if the organization has a competitive strategy that requires it to be a low cost operator, then it is likely that the role of HR will be to provide basic services and compliance at low cost, with an emphasis on basic services. Likewise, if the strategy is based on differentiation, then a focus on innovate products is likely to support an emphasis on people management, leading to higher levels of investment in employee development and career management, with a higher profile for the HR function. Lawler & Mohrman (2003) see HR's greatest opportunity as being in the development and implementation of corporate strategy, by helping the organization to develop the necessary capabilities.

2.4.1 E-HRM as Strategic Enabler- Sanayei, and Mirzaei, (2008), “technology-enabled model of HRM is frequently started as an cost cutting program, but it quickly progressed into a foremost medium of competitive edge and in the mean time human resource function of few organizations utilize some virtual HRM utilities, others try hard to reengineer, computerize and incorporate almost all of their HRM activities”. Walker (1992) states human resource I strategies are departmental strategies like marketing, operations or information technology strategies, however these are unlike in the logic that they are entangled with all other strategies in the establishment. E-HRM operates as an instrument that assists human resource management in attaining strategic edge. As per Wang and Mobley (1999), in an organization three HR strategies for global technology innovation and rapid organizational development were proved to be effective for integrating person-system-organizations elements: personnel strategy, system strategy, and organizational strategy. As per Bieasaliski (2003) the HR-department can focus more on the qualitative tasks in human resource planning like coaching and consulting. By sharing information and being knowledgeable business partners are able to act more productively to maintain the association over time. That is, relationship strength can create a competitive advantage through the strategic sharing of a company’s key information.
Beckers and Bsat (2002) pointed out increase in competitiveness by improving HR practices and shift the focus of HR from the processing of transactions to strategic HRM are the few reasons why companies should use HRIS. Wang (2005) describes the need for technology innovation and HRM integration. The development of e-HRM systems is growing, allowing the HR function to become more strategic. Ruel, Bondarouk and Velde (2007) have conducted a research in the Ministry of Internal Affairs in the Netherlands, where e-HRM in the form of employee self-service applications was introduced. The study shows that individual assessment of e-HRM applications influences HRM technical and strategic effectiveness. Hussain, et al. (2007) states, few differences existed between Small/Medium (SME) and large company. HRIS usage and that specific use of HRIS for strategic collaboration enhanced professional standing.

Bell. Lee, Young, (2006) examines information technology has been cited as a critical driver of HR’s transition from a focus on administrative tasks to a focus on serving as a strategic business partner. This strategic role not only adds a valuable dimension to the HR function but also changes the competencies that define the success of HR professionals. Panayotopoulou, et al. (2007) analyses and discusses the development of e-HR use in Greece and the reason for adoption of e-HR practices focusing on strategy process and HRM issues. Finding shows that e-HR facilitates the transformation of HRM role into a strategic one.

According to Tanya B. and Ruel, H. (2010), examinations of recent e-HRM literature classify strategic benefits prescribed for e-HRM as generation of HR metrics to support strategic decision making, freeing HR staff from administrative burdens and allowing them to undertake strategic people-management activities, transforming HR professionals from administrative paper handlers to strategic partners, the branding of organizations. As asserted by Ketlley and Reilly (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. According to Aghazadeh (2003), HR professionals need to integrate their knowledge of core HR functions with the economic and business environment within which they work, and also keep abreast of technological developments. By doing this, HR professionals will be able to have a strategic
impact on their organizations. Fletcher (2005) traces the transformation of human resources from manual processes to sophisticated CRM and ERP systems and examines the effectiveness of online strategies for attracting talent. CedarCrestone (2013) HR Systems Survey report with HR technology organizations with more HR Technology are able to achieve high cost efficiency and able to align HR and business strategy resulting in competitive advantage.

**Figure -2.6: Evolution of Human Resource to Human Capital Management in Business**

![Figure 2.6: Evolution of Human Resource to Human Capital Management in Business](image)


**2.4.2 Administrative Burden Reduction-** As per Sacht, J. (2003), it is clear that HR must find a way to relieve itself of administrative burdens (without abdicating their administrative role) in order to maximize its contribution to business strategy. As per Wright & Dyer (2000), HR function has had to play a more strategic role in the organization. The only way to achieve this is to relieve much of the burden of transactional human resource activities in order to free up time...
so that HR can concentrate on traditional and transformational HR activities. This is done either by outsourcing some of the human resource function, but what would be more relevant to this study, is to utilize information technology in the form of e-HRM. New systems have been developed that allow management and employees to manage much of their own human resource activities, such as leave application and approval, personal data changes etc. Thus, e-HRM systems aid in freeing up time for the HR function so that there can be greater focus on high-value strategic initiatives.

As per Matman (2006) e-HRM technology should free up the HR professionals from time-consuming administration activities. This should enable HR professionals to spend more time on strategic activities and the delivery of important HR activities face-to-face. It is therefore expected that the use of e-HRM implies a change of the job content of the HR professional to strategic partner. Ulrich (1997) mentions, as technology frees up HR from some of its routine tasks, there is a greater opportunity for HR professionals to become a strategic partner. According to Lawler and Mohrman (2003), the link with the implementation of e-HRM technology that the technology frees up time in the HR organization which can be spent on the activities related to the strategic role of HR.

The committee Rijn Van (2001), concluded that the different HR functions of the different parts of the public sector should be integrated into a single shared service centre. IT should enable the integration of the dispersed HR function and therefore could be HRM goal for the adoption of e-HRM technologies within the Dutch MIA. As per Matman (2006), the use of e-HRM technology is expected to lead to changes in times spent by HR professionals on specific HR activities. This change is driven by the new HR architecture where employees and managers are expected to have more HR responsibilities According to Huselid (2004), some organizations strive to free HR professionals for more strategic tasks. HR professionals are enabled to spent more time on strategic aspects of HRM when are freed from administrative day-to-day activities.

2.4.3 Change Management- According to Gloet and Berrell, (2003), “the development of information and communication technologies (ICTs) has radically changed our social and economic lives, and has had a profound effect on the way organizations are managed”.
According to Hitt and Brynjolfsson (2000), “ICT enable firms to introduce organizational changes in the areas of re-engineering, decentralization, flexible work arrangements, outsourcing, lean production, teamwork, customer relations and it also allows firms to produce with greater flexibility and shortened product cycles to satisfy shifting consumer preferences and in turn, these organizational changes are essential for realizing the full benefits of ICT”.

According to Matmann (2006), the new HR architecture where employees and managers are expected to have more HR responsibilities. In the mean time it is expected to lead to changes in the time spent by HR professionals on IT activities, administration activities, supporting managers and employees, and strategic activities. According to Arnal et.al (2001), the incidence of organizational changes is much higher in the firms that invest in ICT or have high share of workers using computers than is the case in the firms that do not invest in ICT or have low share of workers using computers.

According to Thite et al. (2008),” historical analysis of trends showed the role of e-HRM in the company has changed over time from being primarily concerned with routine transactional HR activities to dealing with complex transformational ones”. According to Lawler III & Mohrman (2003), “a dramatic change in the employment law arena is forcing Human Resources (HR) to transform its own operations, and its strategic role in contributing to the success of business of all size”.

2.4.4 Knowledge Management- As per Biesalski (2003), at first the growing attention of companies on the factor knowledge is mainly driven by the evolution of information technology. Information systems like e-HRM solutions that network information, enable companies to get a consistent concept for their knowledge management. According to Newman (1991), the availability of new information and communications technology (ICT), particularly the World Wide Web, has been instrumental in catalyzing the knowledge management movement. Knowledge management (KM) is a collection of processes that govern the creation, dissemination, and utilization of knowledge in an organization.
As per Ajiferuke, I. (2003) “information technologies, such as intranets, web portals, and groupware, are often used to facilitate the sharing of knowledge among a group of workers (commonly referred to as a community of practice) in an organization because of their capabilities in extending the reach as well as enhancing the speed of knowledge transfer”.

According to Lengnick-Hall and Moritz (2003), “e-HRM provides the HR function with the opportunity to create new avenues for contributing to organizational effectiveness through such means as knowledge management and the creation of intellectual and social capital”. According to Biesalski (2003), a variety of techniques is used in companies to acquire knowledge, to organize knowledge and to make knowledge transparent. At the moment ePeople organizes the competency tree as a simple tree data structure in its database.

According to Bingham, & Galagan, (2007), Indian organizations use e-HRM as a tool for training and development to enhance knowledge capital and also stay at par with the global competition. As per Tyler, K. (2006) as Indian educational institutions do not sufficiently prepare students for corporate work, therefore the concept of training and e-learning is welcomed by most large and IT organizations in India. Bhattacharya, I. & Sharma, K. (2007), the National Knowledge Commission was established to make India a potential leader in the field of knowledge and learning. Indian organizations are also promoting e-learning to enhance the knowledge capital of their employees and therefore contribute to firm performance. According to Bhatnagar, J. & Sharma, A. (2005), e-learning initiatives seem more predominant in large Indian companies and multinationals that tries to provide the best practices for their employees. It has been also observed that impediments for e-HRM services in Indian corporate are resistance from HR leaders that they may have reduced control over HRM functions and also lose their primary jobs.

As per Taylor (2004), in most organizations, the key professionals involved in knowledge management activities are human resource managers, process & product developers, and information technologists. As per Lengnick-Hall and Moritz, (2003), “e-HRM also provides the HR function the opportunity to create new avenues for contributing to organizational effectiveness through such means as knowledge management and the creation of intellectual and
social capital”. As per Hitt and Brynjolfsson (2000), OECD (2002), e-HR helps maximize a company’s progress toward a knowledge economy and increased shareholder value. As per Biesalski (2003), to make implicit knowledge more transparent Daimler Chrysler AG, Plant Worth uses skill management in his HR-solution to document the knowledge of each single employee.

**2.4.5 Employer Brand Image - As per** The committee Rijn Van (2001), HRM could play a significant role in strengthening the position of the public sector in the labor market. However, this required the renewal of the HR system and use of IT (Quoted in MinBZK 2006). As per CedarCrestone (2013) HR Systems Survey report, with HR technology especially business intelligence, organisations are able to retain more talent resulting in competitive advantage.

**Figure-2.7: Business Intelligence and Competitive Advantage**

<table>
<thead>
<tr>
<th>Value of HR Technologies from Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>More BI Technologies Linked to Top Talent Retention and to Improved Competitive Advantage</td>
</tr>
</tbody>
</table>

![Diagram showing the relationship between Top Performers with more HR technologies, especially Business Intelligence, Better Retention of Top Talent, and Achieve Competitive Advantage with correlation coefficients r=0.36, r=0.24.]

How are Top Performers leveraging technology to retain top talent? Where should you spend money?

They use HR business intelligence and get that data into the hands of managers for best practice workforce decision making.

Bhatnagar (2007) sees e-HRM as providing a powerful brand identity in the external recruitment area which would not be possible with traditional approaches. E-HRM can help in a positive way by providing the ability to access, collect and disseminate information, giving individuals greater access to information about job opportunities, benefits and setting expectations about an employer. As per Bondarouk, T et.al (2012), “Promoting an organizations employment brand often occurs via different media sources, of which corporate web-sites and social networking sites recently gained in popularity”. As per Alleyne, et al. (2007) HR intranet had an influence on satisfaction with the overall HR function. These internal perceptions of the organization and the HR function are also be shaped by the use of e-HRM through improved communications, better internal job application processes and access to policies. External applicants are also likely to form impressions of the organization as they pass through the recruitment process.

According to Bondarouk, T et.al (2012), “ corporate websites moderate the relationship between employer branding and organizational attractiveness positively, while the outcomes of social networking sites show no significant result and outcome show that corporate websites are an important tool to provide organizational outsiders with employer branding information”. According to West & Berman (2001), in a study of public sector managers, found that line managers believed that good e-HRM would allow the organization to compete with the private sector in attracting and retaining good employees. According to Bondarouk and Ruel (2010), examination of recent e-HRM literature classify strategic benefits prescribed for e-HRM in six groups and found branding of the organization one of them.

According to Bondarouk, T et.al (2012) organizations, on the other hand, more often use these types of communication on their own corporate websites by focusing on employee testimonials to increase their employer brand. As per Foster (2008), e-HRM also presents opportunities for developing employer branding and can be truly regarded as a strategic capability that would not be possible without the technology. Panaytaoplaou et al. (2007) found that 78.4% of his sample saw e-HRM as having an impact on company image.
2.4.6 Standardization of Practices—Lepak and Snell (1998) stated that IT can be of support when the HR function is to be integrated as different parts of the HR function are provided by different parties (managers, employees, HR professionals or even other organizations). As per Rob, s. (2008), 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. Components being e-enabled can be implemented within subsidiaries as a standard tool in performing HR functions. Bjorkman and Lervik (2007) put forward three dimensions of ascending levels of transfer success – implementation, internalization and integration of diffused HR practices. According to Marler (2009), organizational goals for e-HRM investments include cost reduction through streamlining HRM operations.

According to Bondarouk, T et al. (2004), two conditions for the integration of the HR functions were standardization of the HR function and harmonization of dispersed HR functions. According to Mittal and Kumar (2006), business practices used to differ from place to place before application of ICT or web based technology in HR was implemented. The same has been standardized now. According to Shane (2009) e-HRM allows for decentralization and standardization of HR tasks across global boundaries. According to Tanya and van Balen (2010), business models of HR SSC’s try to capture the benefits from both centralized and decentralized models that are often conflicting in nature. While serving multiple customers having various needs, standardization and a clear management structure are maintained as benefits of the central model.

According to expert group on future skill needs EGFSN (2008), “internal integration and centralized decision making is of paramount importance in the operation of global e-HRM system and any deviation from the standard system would arguably compromise the quality of the data collected and ultimately impair the informative value of any subsequent analyses of this data”. According to Orlikowski, W. (2000), MNCs strive to attain internal consistency of policies and procedures to develop and sustain their corporate identity, while, on the other hand, MNCs are forced to tailor their policies and practices to suit the cultural, societal, and legislative environment of their host nation in order to achieve local efficiency. Morgan and Kristiansen
(2006), contend that the countervailing nature of these institutional contexts will ultimately lead to micro-political conflict between the headquarter (HQ) and the subsidiaries and the subsidiaries themselves. According to Bondarouk, T (2004), in most of the cases it has been seen standardization and harmonization of HR policies and practices as a condition for globalization. Globalization was a driver for centralizing HR policies responsibilities at company headquarters, while responsibilities for applying HR responsibilities were actually decentralized. E-HRM can be of support in integrating the dispersed HR function.

2.5 Financial Impact / Growth- Fletcher (2005) states, for HR to survive in this brave new world it needs to “possess a technology” may have to lead a line of business and should have profit and loss responsibility, understand what it means to be accountable for delivering business results. According to Mittal, & Kumar (2006), “the desired data is being replicated online between various information centers from time to time and this has resulted in minimizing the lead time and saving of resources both in terms of manpower, paper movement and cost on communication and operation”. According to Lengnick-Hall and Moritz (2003), for HR function, e-HRM has the potential to affect both efficiency and effectiveness. Efficiency can be affected by reducing cycle times for processing paperwork, increasing data accuracy, and reducing HR staff. Effectiveness can be affected by improving the capabilities of both managers and employees to make better and timelier decisions.

2.5.1 Outsourcing cost- As per Dessler (2004) mentions, 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. As per Lepak and Snell (1998), idiosyncratic activities are most suitable for outsourcing as it is low in uniqueness, infrequent use, more standardized and its value also low. Core HR activities are expected to be performed by the HR professionals. Traditional and peripheral activities with a low uniqueness are devolved to managers and employees and the most suitable to be provided on digital platform. As per Foster (2009), e-HRM allow organizations to perform more work internally without the addition of more staff, or by transferring work back from expensive external contractors and agencies. It has been identified that there might be savings arising from reduced reliance on third party
providers such as recruitment agencies, where e-HRM makes it possible to perform the work more cost effectively internally.

**Figure-2.8: The value and Uniqueness of HR Activities**

<table>
<thead>
<tr>
<th>Idiosyncratic</th>
<th>Core</th>
<th>High</th>
<th>Uniqueness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral</td>
<td>Traditional</td>
<td>Low</td>
<td>High Value</td>
</tr>
</tbody>
</table>

Source- compiled by scholar

### 2.5.2 HR Head Count Reduction

As per Foster, S. (2009), cost reduction is a critical driver in most e-HRM projects. Opportunity for cost reduction arises because any resource devoted to the delivery of transactional services, such as the manual entry of data, maintaining employee records, processing requests, filing and dealing with enquiries is expensive and organizations will seek to reduce these types of cost at every opportunity. It is obvious that there is clear pressure within organizations to reduce HR operational cost.

As per Lengnick-Hall & Moritz (2003), fewer HR professionals are needed because e-HRM eliminates the “HR middleman”. According to Prasad, L.M. (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. Walker (2001) stated, many systems have been implemented by cutting HR staff, outsourcing and imposing new technology. The committee Rijn Van (2001) concluded that reducing costs was not necessary because money, in their opinion, was not a real problem. The problem was the shortage of qualified employees in the labor market and therefore the public sector risked not being able to provide the services demanded. Therefore organizations should work more efficient to be able to more with less (more work with fewer employees). According to Wiscombe (2001), there is general consensus that HR technology lowers HR operating costs although estimates as to the potential for
operational savings vary, from a reduction in administrative staff of up to 40% and reductions in transaction costs of 50%. According to CedarCrestone (2009), US evidence suggests that a 20-25% reduction in HR costs is possible through e-HRM. The Aberdeen Group (2009) found that best in class organizations decreased the number of manual HR transactions by 11% and shortened HR service delivery cycle times by 5%. One important HR measure of administrative efficiency, apart from cost, is the number of HR people required to deliver the service relative to the number of employees supported – most large organizations strive for a ratio better than 1:100, that is, one HR person serving every 100 employees.

2.5.3 Cycle Time Reduction - As per HR Focus (2002), some statistics used to justify the investments made in e-HRM technologies are for example the average cost of an HR transaction, number of inquiries to the service centre, cycle times, headcount changes in the HR department and financial metrics such as return on investment (ROI) and the duration of the payback period. Lengnick-Hall & Moritz (2003) stated, the core goal of e-HRM is to assist the organization and human resource professionals to get non-strategic, transactional HR tasks done quicker, more cost-effectively and with less dependence on HR staff. Foster et al. (2004) describe that the application of the internet to the human resource function (e-HR) combines two elements; one is the use of electronic media while 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. As per Mittal and Kumar (2006), the implementation of e-HRM has made duplicate efforts almost zero, as the software is maintained at one place, entry of information is done at the point of generation of information and automatic consolidation and integration of data is taking place. Lengnick-Hall & Moritz (2003) mentions, besides this, the automation and provision of HR activities enables streamlining of the HR processes which can lead to reduced cycle times of the HR processes. Service centre initiatives permit the organization to serve up to 11% more employees with an average 60% cycle time reduction across HR processes. The Aberdeen Group (2009) found that best in class organizations decreased the number of manual HR transactions by 11% and shortened HR service delivery cycle times by 5%.
2.5.4 Administrative and Operational Cost - As per Foster S. (2008), for many organizations, introducing e-HRM represents the first stage of HR transformation, which is about efficiency, effectiveness and removing excess cost as well as improving HR service delivery. As per Walker (2001), “if HR technology is to be considered successful, it must change the work performed by the human resources personnel by dramatically improving their level of service, allowing more time for work of higher value and reducing their costs”. Aravind and 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. 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. The survey conducted by Watson Wyatt (2002) to research the impact of e-HRM technologies, cost reduction was found to be a top metric in formal business cases for the adoption of the e-HRM technology. Ruel (2004) study has suggested that the implementations of e-HRM are driven by cost reduction goals of the HR system. According to Lengnick-Hall & Moritz (2003), a typical argument for the adoption of e-HRM technologies is: “Use e-HRM and your organization can reduce process and administration costs”. As per Cober, et al. (2004), for recruitment, organizations are utilizing their own web sites even better because of the rising costs of web advertising and decreasing ease of finding qualified applicants.

The Aberdeen Group (2009) evidence suggests that the amount of time spent on operational (i.e. administrative) work is reducing as a result of past process improvement efforts - it has now fallen as a proportion of overall workload from 50% in 2003 to 36% in 2007, achieved through technology-enabled HR delivery models such as shared services and outsourcing.

2.5.5 Quality Improvement Saving - According to Jessup and Valacich (2004), the IT system has provided better corporate governance and employees have become aware that their movement, overtime, unauthorized absence, tours, expenses on medical, transport, telephone etc. is being monitored. As per Lengnick-Hall & Moritz (2003), e-HRM speeds up transaction processing, reduces information errors, and improves the tracking and control of HR actions, thus e-HRM improves service delivery. As per Panayotopoulou et al. (2007), employee and manager self service leads to higher accuracy and data quality. Adamson and Zampetti (2001)
stated, through the implementation and subsequent use of employee and manager self service applications, e-HRM has brought about considerable improvement in the updating of employee information, the posting of job specifications, changes in policy and procedure, training and staff changes. As per Oracle JD Edwards EnterpriseOne Manager Self Service (2007), e-HRM transforms managerial activities from manual, paper-based processes with multiple levels of approval to a web-enabled self-service system, it allows both managers and employees to stay focused on what matters most: improving performance. As per Mittal and Kumar (2006), e-HRM has minimized the data mistakes as the data entry is being done by the person who is directly responsible for source data generation.

2.5.6 Output of HR - The survey of Watsonwyatt (2002) mentions productivity improvement as one of the four top metrics used to justify the implementation of e-HRM technologies. As per Hawking and Stein (2004) “this technology holds out the promise of challenging the past role of HR as one of payroll processing and manual administrative process to one where efficiencies cost can be gained, enabling more time and energy to be devoted to strategic business issues”. As per Oracle Jd Edwards EnterpriseOne Manager self service (2007), delegation of authority at the appropriate level and time, the time saved can be translated directly into cost savings for the organization. By empowering managers to perform business transactions themselves, human resources staff time can be saved and, just as importantly, your managers can be more productive because they have the real-time information they need at their finger tips, which allows them to manage their teams more effectively. Researchers like Foster et al. (2004), Bondarouk, T(2004), Strohmeier (2007), reveals the idea that e-HRM increases productivity through decreased requirements for HR staff, increased speed of process due to automation as well as cost reduction. Towers-Perrin (2002) notes how the use of e-HRM is creating opportunities for HR shared services delivery centers, which in turn lead to new economies of scale, including better and greater efficiencies for HR operations. According to Aberdeen Group (2008) indeed, for most organizations investing in e-HRM, it is unlikely that there will be financial funding for an e-HRM project without quantified operational benefits; economic pressures and the need for tight cost control drive 76% of investments in HR systems, although fewer than one third of organizations describe the internal HR function as ‘very cost effective’.
2.5.7 Stationery Material Cost- As per Mittal & Kumar (2006), many of the information sent earlier to the employees through paper are made available online which has reduced lot of paper work including pre-printed stationery etc. All the application forms have been provided online wherein employee can used them for submitting their applications. With the implementation of workflow applications papers have been replaced with electronic documents. As mentioned earlier, it is very difficult to find out the direct cost and benefit from the software, so is the case with return on investment (ROI). According to Adamson and Zampetti (2001), “HR self-service, entails the use of interactive technology by employees and managers to obtain information, conduct transactions and essentially short-cut processes that previously required multiple steps, paperwork, and the involvement of HR staffers”. Foster (2009) states, other cost savings might arise as a result of displacing existing technologies with resultant savings in licensing and support costs, or switching to electronic rather than conventional media. For example, the introduction of technology means that more documents (offer letters, interview invitations etc) can be sent on-line, with a reduced need for stationery, postage, facilities and other day-to-day costs. Recruitment processes, in particular are often highly reliant on the mail system, whereas e-recruitment eliminates this need made large savings simply by scrapping its physical applicant packs.

FIGURE- 2.9: Cost Efficiency and Competitive Advantage

2.6 E-HRM as a Facilitator- Keebler & Rhodes (2002) stated, to provide better service to users of the HR function, it is significant to focus on the feeling of the users consuming service of the HR department. Gupta (2008) stated e-HRM play various roles of system manager, HR manager, time manager, payroll manager, and report manager. According to Prasad (2003), the thought of automated HRIS is derived as a structured way of providing information about human resources, their functioning, external factors relevant to managing employees. Sacht (2003) finds, web technologies have already provided employees direct access to each other, to HR, and to business information with such a simplicity and intelligence that every employee can contribute more directly to company results. Now, digital databases, voice and video, interactive tools and multimedia content is available to extend the techniques for capturing and spreading messages. As asserted by Ketlley and Reilly (2003) nature of HR departments has changed because of the development of e-HRM and employees tend to ask for advice rather than administrative assistance.

As per Towers Perrin (2006), the survey revealed that the greatest growth in HR technology is in the area of talent management. This is attributed to the fact that “talent management is front and centre on the organizational leadership agenda today”. According to Shane (2009), e-HRM is seen as a facilitative tool that can be used to manage prospective and current talent to ensure that the appropriate skills are attracted into the business at the right time and that these skills are retained.

As per Keebler & Rhodes (2002), with self service applications companies are trying to meet the HRM needs of managers and employees and at the same time support the business objectives of the company. As per Ruta (2005), many of the reporting-type activities, earlier performed by human resource executive, can now be performed online by managers and staff themselves.
The first Cedar Crestone Asia Pacific-APAC HR Systems Survey (2008-2009) discovered that HR service centre approach enables organizations to serve more employees with their HR staff. As per Prabakaran (2012), recently, a second wave of ESS shifted the focus from these purely efficiency based applications towards empowering employees and managers to take more responsibility for their jobs and development. Career planning, skills profiles, learning, objective settings, appraisals and more and more analytics are increasingly popular with ESS applications. As per Corporate portal Mystro HR (2013), HR and payroll, empowering employees in their day-to-day functioning requires giving them anytime; anywhere access to basic employee facing processes as well access to information about the people in their teams. In absence of these, employees are left wondering and waste time chasing people and paper.

As per Sanayei and Mirzaei (2008), on their own desktops, line managers nowadays perform appraisals, evaluate employee costs, generate HR reports (turnover, absenteeism), process training requests and oversee competence management. Employees have access to everything they need to change and manage their personal files, plan their development, process financial documents and apply for new jobs. HRM professionals are facing a digital future. As per Yao, et.al (2010), e-HRM facilitates openness and transparency and most of the information is just only far away from one mouse click, it supports individual as well as group members in making decisions, especially in case of group decision making. E-HRM tools is used in information dissemination, opinion sharing and it facilitates the complete decision mechanism.

In the view of Armstrong (2003), e-HR provides the information required to manage HR processes. These may be core employee database and payroll systems but can be extended to include such systems as recruitment, e-learning, performance management and reward. The system may be web-based, enabling access to remote or online and at any time. The information provided by the e-HR process can be communicated across organizations. 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 progressive companies.
According to Mittal and Kumar (2006), with ICT, the consolidated information is available to the management for effective decision making instantaneously and they need not to wait for collection, compilation and consolidation of information, which used to take lot of time earlier. As per Yao, et al. (2010), if e-HRM implemented and used correctly, can improve the quality of group decision making significantly by minimizing the negative effects of group decision-making and by maximizing the benefits of group collaboration and decision-making can act as an information support system.

As per Awwal (2009), “ICT segregates data through applications and adequacy of hardware to meet user’s required performance criteria today across wide area network and is providing new dimensions to decision making process”. According to Mittal and Kumar (2006), e-HRM system has helped in early consolidation of accounts particularly in case of employee’s expenses, salary, income tax returns and provident fund etc.

According to Keebler & Rhodes (2002) “e-HRM technology should not only be designed to make the HR processes as efficient and cheap as possible, but the e-HRM technology should be made useable too, to increase the service experience of the managers and employees and in this way a client service improvement of the HR system can be achieved”. According to Watson Wyatt’s (2000) survey, web technology is the predominant method for delivering HR-related services to employees and managers, and offers significant opportunities to improve communication, knowledge sharing and HR delivery systems. E-HRM also involves many more stakeholders besides human resource in the HR department and the business and also includes job applicants and employees from all levels.

As per Sacht (2003), “e-HRM tools are not yet available everywhere in the developing world, they are spreading rapidly and present a unique opportunity for developing countries to benefit most from the technological revolution now unfolding: low-cost telecommunications systems can help countries to leapfrog ahead through distance education, distance health services, and much better access to markets and private sector partners abroad”. The Aberdeen Group (2009) found that best in class organizations improved employee satisfaction by an average of 9% through improved HR services.
2.6.1 E-HRM and Technology Acceptance Model (TAM) - The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. Perceived usefulness - defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". Perceived ease-of-use - Davis defined this as "the degree to which a person believes that using a particular system would be free from effort".

FIGURE- 2.10: Technology Acceptance Model (TAM)


According to Ruel (2001), it is expected that when end-user understand the e-HRM goals and the intended effects of the e-HRM technology, it will positively affect the use of the e-HRM technology which is expected to lead to the intended use of the technology. Venkatesh, et al. (2003), in their study mentions that usefulness is more strongly linked to behavior intentions of user and actual system use than ease of use.

As per Bondarouk, T. (2004) the goals that drive parties, stakeholders, and individuals in organizations will set a framework for the real e-HRM applications and approaches to be implemented. Ruta (2005), in his study demonstrated that usage of HRIS increased when IT user acceptance principle were integrated with change management principles.
Voermans and Veldhovern (2007) attitudes towards adoption, using TAM with a strategic preference more likely to have a positive attitude to e-HRM, employee champion role preferred more negative, do not find positive correlation between administration role and e-HRM. The preliminary investigation by Yusuf et al. (2011) made on perceived usefulness, perceived ease of use and attitude towards using e-HRM illustrates, e-HRM provides the human resource function with the opportunity to create new avenues for contributing to organizational success.

Most of research on e-HRM has been done in developed economies like United States and European Union. Netherland is pioneer and far ahead in e-HRM research. Very little empirical study has been from emerging countries like India. India is politically, economically socially and technically very different from the developed economies. As there are much distinction in business environment and the management practices between developed economies and India, there are always possibilities of different research results. There is no empirical evidence of level of prevalence of e-HRM and different e-HRM instruments and tools being used in Indian context. There is no empirical evidence in literature which examines the impact of e-HRM in terms of strategic capability. Available research literature does not cover the impact of e-HRM in terms of financial contribution, internal stake holder satisfaction.