

Human Resource Information System (HRIS): Re-engineering the Traditional Human Resource Management for Leveraging Strategic Human Resource Management

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ABSTRACT: *Human Resource Management (HRM) functions today no more reside in the comfortable cubicles and sophisticated cabins. In the fast growing business world, the changing paradigms have pushed HRM functions to revive and deliver on the business front. Today HRM has travelled from attendance sheet to balance sheet of the organization in the pursuit of transforming HRM to Strategic Human Resource Management (SHRM). Many HR processes and functions have been reengineered over the years with the help of one of the most important SHRM tools, Human Resource Information System (HRIS). HRIS has leveraged SHRM in more than one ways for HR practitioners enabling the transformation of traditional HRM to transformational HRM. This paper presents a conceptual framework through an HRIS model underpinning the potentials and opportunities that an HRIS offers for practicing SHRM in the twenty first century for the academia and industry professionals.*

KEYWORDS: *HRM, SHRM, HRIS, Strategic Business Partnership, E-HRM.*

1. Introduction

Human Resource Management (HRM) functions in organizations have seen big changes over the years. Being a critical business unit, they no more live in an isolated world and they are now on the roll. Of late, stakeholders have finally realized that HRM functions if aligned to business as strategic partnership, can yield unimaginable results. Today, in fact just not HR, but every business unit, is on board for supporting the strategic mission(s) of the organization. Ashraf at Hewitt-Aon, advocates, “*HR has been playing more direct roles in accomplishing organizational goals, its strategic partnership with business is critical to any business success*”. Taking a cue from this view, it is imperative that all HR functions in 21st century have to be linked to strategic HRM practice. So what makes an HRM function strategic in nature? Drucker et al. (1997) have endorsed in their research that today management professionals in general and HR professionals in particular are facing a dilemma of embracing technology along with the challenge of managing HR. It is not the technology, but the challenge of remaining human and managing once humane without which IT tools will yield no big results in long term business. The rapid changes that saw the emergence of Human Resource Information Systems (HRIS) at General Electric in the 1950s was basically came as strategic need. HRM gamut has changed with the advancement of technology in business. HRM moving to its strategic role needed to restructure itself in ensuring that every HR function is customized to a strategic framework, (Hyde & Shafritz, 1977). Sanctis (1986) prompted that as organizations started growing in manpower, the HR operations became more complex in nature. The data of HR got immensely multiplied. Managing HR data and managing the

human resources being complimentary to each other called for an exhaustive system that could manage the whole professional life cycle of employees in organization. Right from HR acquisition to HR exit, there felt a need to see how these traditional HRM practices can be converted into transformational HR practices. Thinking of such a system, besides many other researchers, Tannenbaum in 1990 first defined an HRIS as a system which can be used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information about human resources in an organization. Tannenbaum's definition gave important impetus for the need of developing an information system which could change the traditional HRM into strategic HRM. Kavanagh, Gueutal, and Tannenbaum (1990) while extending Tannenbaum's definition of HRIS, have further advocated that HRIS philosophy is beyond the integration of computer hardware and associated HR-related software but it strategically focuses on people, forms, policies, procedures, and data, in addition to. This emphasizes on the idea of merely having a computerized information does not fulfill the criteria of managing HR. To manage HR data and servicing the HR needs, there is a strong need of human factor that could integrate the HR process and policies in the system and then manage and deliver HR operations efficiently. Henson (1996) supporting the need of HRIS for key HR decision making, said, technology has to be embraced for the efficient and effective HR operations.

2. Objective & methodology

This study, being exploratory in nature has used qualitative method while reviewing the evolution of HRIS in the context of SHRM. The broad objectives of this study are as under;

1. To understand the development and journey of HRM to strategic HRM
2. To explore the HRIS role in leveraging strategic HRM and
3. To propose a conceptual model of HRIS showing its strategic HRM alignment.

In this pursuit, the secondary data are collected through research papers on the development of HRIS as strategic tool from national and international sources in addition to books on HRIS. In order to enrich the study with primary data, view(s) of industry experts are also taken into consideration about HRIS in action. The in-depth review of research works in the SHRM & HRIS domain that have been referred to, are carefully analyzed over distinguished heads in literature review and then used to develop a conceptual model of HRIS leveraging SHRM. The researches represent global perspectives on the HRIS role in SHRM, predominantly belong to USA, UK, Germany, Middle East and Asian countries.

3. Literature review

3.1 Strategic human resource management (SHRM) & HRIS

Towards 1990s, Human Resource Management (HRM) saw great technological advancement resulting from fast and ever dynamic business environment. As a result, there emerged the concept of Strategic HRM in business. Tracing back, previously, the HRM has tremendously changed as a profession and scientific discipline. The twentieth century wherein employees were treated as just one of the easiest replaceable factors in the organizational system, got changed to one of the key sources of sustainable competitive advantage (Thite, Kavanagh, & Johnson, 2012).

Becker & Huselid (2006) advocated that the organizational performance gets directly affected by human resources as they are now acknowledged as a strategic asset for competitive advantage under the resources-based view of an organization. Arrival and embracement of new technologies has changed HRM functions way too far adding values to the organization's product or service in the realm of HR department as a strategic business partner. Technology today is an enabler to HRM for providing critical technical support for practicing HRM more strategically. Agrawal (2008) echoing with this view explained in her research that previously, external environmental analysis used to pave path for business strategy, while its implementation used to be dependent on internal stakeholders. Today this practice has changed wherein internal capabilities of organizations have become the main driving force for driving competitive advantage and business strategy. This changing perspective has paved path for merging information system with HR practices.

Despite the technical marriage of IT with HR, experts believed that computers are not the panacea or vital most elements in HRIS, but the information. The focus of an exhaustive HRIS remains intact on information, its validity and reliability and ultimately its utility (Kovach & Cathcart, 1999) for users. Teo, Soon, and Fedric (2001) taking a cue from the finding of Kovach study, endorsed that strategic need of an organization is not for administrative purposes or traditional support but majorly for digging out critical HR information which aligns a function of HR with business. The strategic need of HRIS, highlighted by Kovach et al. is well reflected in the findings of Tansley and Watson (2000) who explained that any HRIS project cannot be successfully completed unless and until all the parties like HR, IT, Vendors and Consultants with the much needed and whole hearted support of top management, do not get to the job in a team form.

Dery et al. (2013) in their case study of the organization MFC, based on actor-network approach have found seemingly a different construct for HRIS which proves HRIS as more of a bane than of boon. They have found that potential of HRIS under organization wide ERP has not really produced the achievement of HR transformation. HRIS did not result in improved HR functionality and a more strategic HR function. A highly customized legacy HRIS when overtaken by an HR modules based enterprise wide ERP system, the HR department grossly lost HR functionality and the HR functions tumbled with declined ability to assume strategic HR functionality. Implementing an HRIS in organization is more of strategic decision hence selection of vendors, managing change and careful design and implementation of HRIS become core responsibilities of an HR department (Mohanty & Tripathy, 2007). In another research Dery, Hall, and Wailes (2006) proposed that HRIS is received and perceived as a change catalyst while managing HR therefore users' acceptance and rejection lies on this context at large.

Gautam and Kasuhik (2011) explained in their research that HRIS plays vital role to support SHRM activities such as: developing HR communication, learning at workplace, career management, Business Process Reengineering (BPR) and decision making. Organizations' priorities are now more focused on business and strategic benefits hence lesser traditional gains are expected from HR functions such as recruitment, training and development, performance appraisal and payroll. Strategic opportunities such as team-oriented job designs, HR metrics, quality HR delivery, and incentivizing team performance with the help of HRIS are treated as focus areas (Mehta & Mahajan, 2012). Chauhan, Sharma, and Tyagi (2011) while reflecting upon on strategic alignment of HRIS with HR functions, found that organization-wide functional integration of HR, strategic objectives being met, shapes the objective of having an HRIS in the organization. HR Metrics are yet another important development in SHRM. Calculation of HR

Metrics is leveraged by HRIS which also strategically aligns the organizations' business objectives with HR functions (Thite, Kavanagh, & Johnson, 2012). Inarguably technology today, has changed work stations and HR functions are no exceptions to it. Technology is a key enabler to HRM function as it shifts transactional emphasis to transformational gains under Strategic HRM (SHRM). Automating and streamlining routine HR transactional activities free-up HR executives to focus more on those areas which add value to organization's end product and secure its future (Hendrickson, 2003). Researchers who have constantly endorsed the critical role of HRIS in managing HR strategically have also tried to define HRIS's basic premise. In the league, Alwis (2010) defined Human Resource Information System (HRIS) as "a computerized system used to collect, record, and store, analyze and retrieve data pertaining to an organization's human resources". Parallely, he also defined the concept of Human Resource Management System (HRMS) as a tool for recruiting, selecting, developing, appraising, and supporting human resources, efficiently and effectively".

3.2 E-HRM and HRIS

Although HR functions have been performed using technology since the time of World War-II, due to increasing competitive pressure, the process got accelerated in 1980s in the wake of cost reduction, improved productivity and advancements in technology leading. The literature on e-HRM and human resource information system (HRIS) recognizes many key advantages of leveraging technology in the delivery of HR services such as: transaction costs reduction, cycle time; streamlining and reengineering HR process, and enhancing the efficiency and effectiveness of HR processes and functions; improving employee satisfaction by delivering quick HR services and shifting the focus of HR from the transaction processing to strategic HRM (Thite, Kavanagh, & Johnson, 2012). In a credible work done by Ruel, Bondarouk, and Looise in 2004, they concluded that e-HRM primarily improves HR's administrative efficiency for cost reduction and strengthens HR policies and processes. Studying e-HRM practices in five companies they established that e-HRM hardly had any positive effect on employee competences, but rather it resulted more in cost reduction and reduced administrative chaos. In an evidence based approach to find the equation between e-HRM and strategic HRM, Marler and Fisher (2013) found that there is no empirical evidence that showed e-HRM serves any direct purpose for strategic outcomes. However, there were some evidences suggested that strategic HRM predicts e-HRM contextually. They concluded that there is a strong need for more empirical studies on e-HRM and strategic HRM to establish meaningful equations between e-HRM and strategic HRM.

According to Kettley and Reilly (2003), a Human Resource Information System (HRIS) based on computers can be called E-HRM which can integrate HR functions. The concept of E-HRM uses an organization-wide network of HR data, information services, databases which are based on HR transactions. E-HRM therefore can be termed as a system based on web and voice technologies for managing HR functions and delivering HR services. Another definition which Gowan (2001) gave of E-HRM is; "a web-based solution that uses latest web application technology to perform real-time HRM functions". She emphasized that even though the E-HRM framework at times appears complex due it comprehensiveness yet due to its user friendly and feature-pack nature, can customized the HR specific needs. e-HRM concentrates primarily on web based and usually stand-alone applications like; e-recruitment and e-learning using social media, while HRIS focuses on an integrated database system encompassing several business modules under an enterprise resource planning (ERP). e-HRM and HRIS both use technology data distributions center, connecting and conducting HR service delivery (Stone &

Lukaszewski, 2009). Parry and Tyson (2011) while examining the real outcomes of e-HRM, found that introduction of e-HRM has definitely enhanced efficiency, service delivery and standardization of some HR functions but with little transformational impact as there was very marginal evidence for involvement of HR in business decision making using e-HRM.

3.3 HR metrics and HRIS

Measuring efficiency and effectiveness is one of the several difficulties of the HR discipline. In contrast to other management functions, HRM function is more delicate, personalized, context-oriented and therefore cannot be managed easily with predefined techniques” (Thite, 2004a). The sophisticated nature of people issues makes it difficult to measure HR’s contribution to the company’s profitability. It is also important to note that change takes place relatively slowly in HRM (Gratton et al., 1999) hence overnight breakthrough should not be expected. During economic ups and downs, people’s expectations and motivation fluctuate and therefore HR policies may be viewed differently in different situations. Hence, short-term gains and quick results as HR effectiveness is vulnerable to mis-representation of real or potential benefits. For example, at Motorola evaluation of training effectiveness is not done with strict and binding parameters, rather it is treated as integral part of overall management improvement (Pfeffer & Veiga, 1999).

HR Metrics and Analytics can be harmful to HRIS products if they are over emphasized. Boudreau and Ramstad (1998) argued that measurement of the HR processes using metrics as bars of efficiency and effectiveness should involve logical, reliable, consistent and flexible parameters. In order to gauge the effectiveness of HR policies, procedures and processes, pure scientific approaches be avoided as they lack human agency approach in most of the current HRIS systems which is detrimental to the success of HRIS (Hesketh & Fleetwood, 2006).

Thite, Kavanagh, and Johnson (2012) in their book *Human Resource Information Systems: Basics, applications & directions* have talked about HR Metrics that is nowadays increasingly used for SHRM. They have detailed the various HR metrics that leverage the HR information for key decision making through HR processes. Some of these metrics have been described as; absence ratio, absence cost, employee turnover (monthly and annual), cost per hire, yield ratio employee turnover cost (monthly and annual), return on human capital, and HR expense factor. They have deliberated that these metrics are just not mere calculations or crunching numbers about the efficiency of HR operations but these have significant contributions in SHRM. For example, Measurement of absenteeism in organization is done to analyze absenteeism problem and helps in addressing the issue and facilitate management to develop effective attendance and leave policy; yield ratio as a percentage of applicants from a recruitment source that make it to the next stage of the selection process is done to make recruitment process efficient; measurement of costs involved/incurred with a new hire is done to show any substantial improvements to savings/retention costs which helps in streamlining recruitment function efforts; HR expenses in relation to the total operating expenses of the company measures expenses against the budget to analyze effectiveness of HR process that contribute to savings, if any; measurement of ROTI (return on training investment) on employees is done to analyze causes of positive/negative ROI which provides an opportunity to optimize investment with HR practices such recruitment, motivation, training and development; measurement of ROTI (return on training investment) i.e., total financial gains/benefits an organization realized

from a particular training program that tells financially whether benefits outweigh the training cost or not; measurement of employee turnover costs resulting from separation, vacancy, replacement, and training that helps in analyzing the attrition factors and leverages retention efforts. These metrics while at one hand leverage the SHRM objectives while at the other end they streamline HR processes and functions. Once the transactional efficiency is achieved, the transformational efficiency and effectiveness can be integrated or achieved in the process.

3.4 Application of HRIS in transactional & transformational HRM

HRIS can serve a wide range of uses. From simple spreadsheets to complex calculations at ease, it can provide comprehensive HRIS solutions. In the context of management of people, HRIS serves as a tool for managing and solving array of issues and processes in the gamut of HR.

Technology can be used for different functional use within the HR verticals such as; Human Resource Planning, Hiring individuals, performance management, compensation and benefits, training and development, health and safety of employee, legal requirements and employee relations, retention and work-life balance reflected Enshur, Nielson, and Grant-Vallone (2002) in their study. The study by Huo and Kearns (1992) described HRIS holds enormous functional capabilities for managing recruitment and staffing functions. Matching jobs and prospective candidates can be done with ease by a computerized HRIS.

Examining the transitions that HRIS brings in HR processes, Wiblen, Grant, and Dery (2010) shared a social constructivist perspective to link talent management and technology. They emphasized the talent management initiatives must be duly backed up by engaging employees in the organization integrating social setup's requirement which leverage employee's performance. The learning and development verticals hence can be greatly used by HRIS for efficient management of talent.

Obeidat (2012) in his study substantiated that HR functions like forecasting and planning, HR analysis, and communication and are integral functions to core functions of HR like recruitment, induction, appraisal, knowledge management, and records and compliance. He further explained that integral functions ensure the accuracy in the core functions of HRM primarily when the HR transactions are used for strategic purposes. Kundu and Kadian (2012) have discussed that though functional scope of HRIS applications have increased in organizations however main HRIS applications still in maintaining and analyzing employee record and perform pay roll as popular applications. Tyrrell (1999) elaborated that HR professionals can make good use of HRIS for functions like recruitment and selection for generating superior pool of candidates.

An exhaustive HRIS in organization is capable of performing almost all the HR functions right from entry to exit of an employee. To confirm this, Kumar and Mishra (2014) in their research found that reasonably medium and large scale organizations use HRIS for HR planning and analysis; employee and labor relations; health, safety and security issues; HR development; staffing; compensation and benefits and equal employment opportunities.

An extensive study by Towers Perrin (2009) has identified a big bouquet of HR functions that HRIS can deliver, involved; HR & Succession planning, Work force planning, Work force dynamics analysis, Staffing, Applicant recruitment and tracking, Employee data base development, Performance

management, Learning and development, Compensation and benefits management, Payroll, Job evaluation, Salary survey and planning and last but not the least International HRM.

Benfatto (2010) in his doctoral dissertation has shared as survey of Cedar Inc. of 2009 on HR Self-service at Baltimore has shown a comprehensive usage HR functions in HRIS across industries which are presented in Table 1 below;

Table 1 HRIS adoption by Industry in 2009

| | World wide Average | Agricult Mining Constr | Financial Services | Health -care | Higher Education | High-tech Manufact | Consumer/Other Manufact | Other Services | Public Admin | Retail/ Wholesale | Transp/ Commun./ Public Utility |
|-----------------------------------|--------------------|------------------------|--------------------|--------------|------------------|--------------------|-------------------------|----------------|--------------|-------------------|---------------------------------|
| Administrative | 92% | 88% | 92% | 94% | 87% | 95% | 93% | 87% | 91% | 92% | 93% |
| Service Delivery | 46% | 41% | 60% | 43% | 38% | 45% | 29% | 55% | 41% | 49% | 55% |
| Workforce Management | 43% | 31% | 40% | 48% | 30% | 33% | 41% | 52% | 27% | 48% | 46% |
| Strategic HCM (Talent management) | 42% | 29% | 43% | 44% | 41% | 42% | 42% | 45% | 33% | 46% | 44% |
| Business Intelligence | 34% | 32% | 33% | 30% | 38% | 29% | 21% | 28% | 31% | 26% | 37% |

Source: Cedar (2009).

3.5 Industry experts & users view on HRIS

Interviews and discussions with HRIS users and few industry experts who are in the domain of HRIS revealed the following perspectives in the development in HRIS.

Ansari (2012) in an interview vouched for the role of HRP and shared that IBM's paperless online enrollment plan for all of its employees saved the company 1.2 million per year on printing and mailing costs, the employees enjoy working with the online plan. Employees want web access to logon at home rather than through the company intranet. Company worked out a web-based enrollment system that employees and retirees can access from anywhere. Having the system in place, IBM was able to cut costs and give employees the freedom to discover their benefits on their own time and pace.

Murthi (2013) in his interview shared the possibility in the strategic partnership of HR with business due to the increasing contribution of HRIS. He described how the machine is off-loading humans from the burden of managing files and cabinets. The HR team can now devote much time in critical decision over HR of organisation, which was not possible while quoting the HRIS at La Marche' Hypermarket. He observed that HRIS enabled HR team as an active business partner in the center of HR gamut.

Singhal (2014) at NEC Technologies shared that SAP's HCM as the HRMS has integrated critical HR functions using cloud. This cloud technology has eased up the essential dependence on LAN for accessing HR data and now managing HR and taking HR decisions have become much easier. Despite these positives, there are organizations like; KRIBHCO, Le Marche', BIBCOLD, AtoZ Info. Solutions, to name a few, are still struggling with their HRIS plan and proposed softwares. The representatives of these organizations unanimously feel that implementing an HRIS is not a joke. Meticulous planning, involvement of key stakeholders duly supported by top management still remains the key for the success

of any HR management tool in organization else even a big player like SAP might also struggle for success as the case of KRIBHCO.

3.6 HRIS models & design

Mayfield, Mayfield, and Lunce (2003) while presenting their HRIS model kept organization's mission in the center and deliberated that "HR Planning and Forecasting, HR Analysis, Knowledge Management, HR Communication, Records and Compliance, HR Development factors should be strategically integrated in a comprehensive HRIS. On a little contrary to Mayfield, Teotia (2012) while investigating the success factors of an HRIS proposed his model wherein he segregated transactional HR with strategic HR and said routine HR operations and functions should not be mixed up with the potential of their strategic use even if they are integral in nature. Strohmeier and Kabst (2012) while establishing the success factors of HRIS said, design of HRIS plays a vital role. Identifying two prominent factors for design they said, if managerial functions of HRIS are designed more based on operational needs, it's more valued by HRM professionals and predict the success of HRIS. It meant that if HR functions are available on the click of mouse for managers it makes things easier to perform. Secondly, line managers and other users of HRIS would love to use HRIS if it is designed in a way that it is available through web access. They further claimed in their study that success of HRIS depends on whether a particular HR function is actually performed or not. Simply dumping a function in HRIS will lead to inefficiency and unexplored potential of HRIS. Shaikh (2012) in while talking about his three HRIS models vis-à-vis HRIS design model, HRIS hexagonal and HRIS phases model, established that the success of any HRIS system is dependent on the design of it, the functional and operational needs are mapped during that phase during the system development life cycle (SDLC) process.

4. Discussion

Different researchers have dealt differently with their coverage and objectives of underpinning HRIS as strategic tool under strategic human resource management. To arrive at holistic view and to work-out a conceptual model of HRIS confirming the paper's topic HRIS: leveraging SHRM, the following discussion is being done around the contexts; Strategic Human Resource Management (SHRM) & HRIS, E-HRM & HRIS, HR Metrics & HRIS, Application of HRIS for Traditional & Transformational HRM and HRIS Model & Design;

HRIS since first emerged at GE during 1950's have seen great technological developments specially during 90's. The competitive advantage that it may deliver for sustainable HRM was aptly recognized by HR practitioners as pointed out by Thite, Kavanagh, and Johnson in 2012. Rao (2009) while presenting the historical evolution of HRM has explicitly underlined that how the changing face of traditional HRM has paved path for Strategic HRM. Becker and Huselid (2006) have justly established the resource based view linked to competitive advantage. Agarwal (2008) has evidently highlighted the internal capabilities of HR for bringing great source of competitive advantage rather relying on external factors for the same. The compelling views of Kovach and Cathcart (1999) is true that IT is an enabler for HR operations and therefore should be treated in that context only while using HRIS. This view has been well supported by Teo, Soon, and Fedric (2001). Mohanty and Tripathy (2007), Gautam and Kaushik (2011) have racked in critical HRIS roles of SHRM activities as developing HR communication, learning

at workplace, career management, Business Process Reengineering (BPR) and decision making which make the core of SHRM. Chauhan and Tyagai (2011), Mehta and Mahajan (2012) and Thite, Kavanagh, and Johnson (2012) have aptly highlighted the role of HR metrics in making SHRM activities fruitful. However, Gratton et al. (1999) have cautioned too for not solely relying on numbers arrived via metrics because these might subject to different working conditions. Pfeffer and Veiga (1999), Boudreau and Ramstad (1998), and Hesketh and Fleetwood (2006) have also hinted upon the same precautions.

The evolving forms of HRIS as E-HRM as discussed by Gowan (2001) and by Kettley and Reilly (2003) have reflected the automated HR processes enabling HRIS framework. HR service delivery dimension has also been discussed by Stone and Lukaszewski (2009) in meaningful way.

While unfolding the application of HRIS in transactional and transformational HRM, Huo and Kearns (1992), Wiblen, Grant, and Dery (2010), Obeidat (2012), Kundu and Kadian (2012), Tyrrell (1999), and Kumar and Mishra (2014), all of these researchers have invariably explained the usage of HRIS such as; HR & Succession planning, Work force planning, Work force dynamics analysis, Staffing, Applicant recruitment and tracking, Employee data base development, Performance management, Learning and development, Compensation and benefits management, Payroll, Job evaluation, Salary survey and planning. Benfatto has proven in his doctoral study with the help of Cedar's detailed survey report that has extensively confirmed that HRIS has been adopted by various industries such as; Agriculture, Mining, Construction, Healthcare, Higher Education, Manufacturing, Consumer, Public Admin., Retail, Wholesale, Transport, Telecommunication, Public Utility and Other Services for the HR gamut of Administrative, Service Delivery, Workforce Management, Strategic HCM, Talent Management and Business Intelligence into various percentage of their usage.

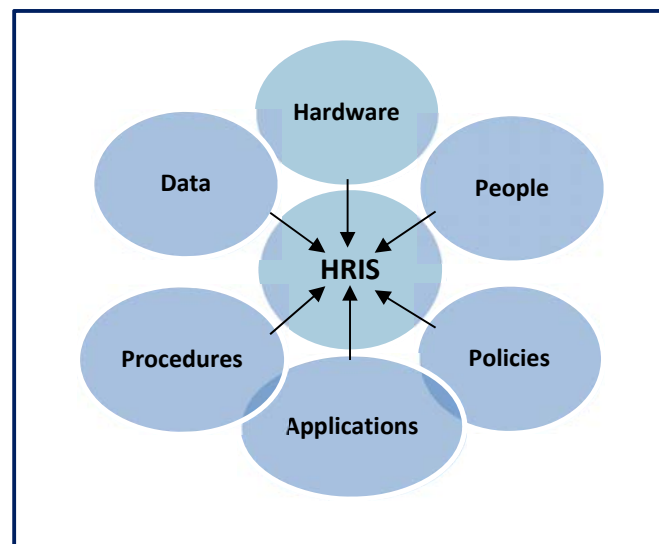


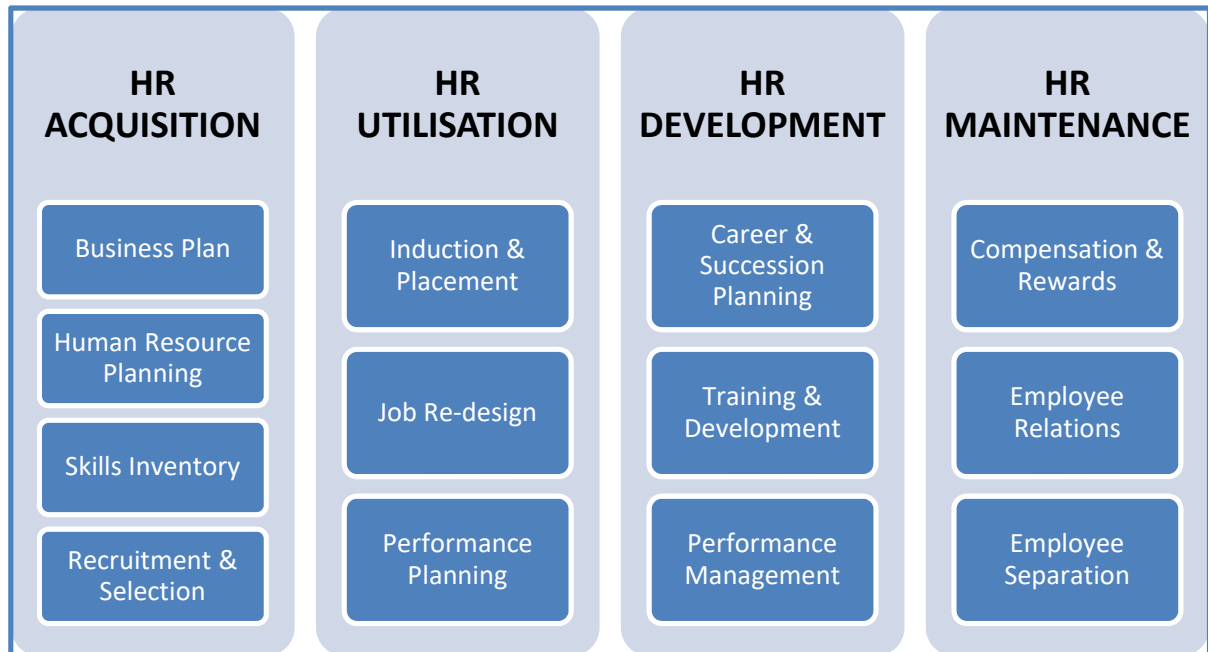
Figure 1 Factors for developing HRIS model

Mayfield, Mayfield, and Lunce (2003), Teotia (2012) and Shaikh (2012) all have given varied factors in the successful development of HRIS models. Their common threads in the development of an HRIS model and its design have been summed up by Hendrickson in 2003. Hendrickson in his research while explaining basic factors for developing an HRIS model, has suggested to create the model around the important factors as; Hardware, People, Policies, Applications, Procedures, Data and keep the HRIS in the center of it. The same is depicted in Figure 1.

Though these factors exist technically stand-alone yet these are interwoven in nature due to integrated functionality of HRIS. These factors also endorse the HRIS philosophy earlier explained by Kavanagh, Gueutal, and Tannenbaum (1990) that computerized information built around hardware and software is not the key to its success. In addition to these there are factors like; people, forms, policies, procedures, and data that are integral and important factors which ensure the HRIS is properly planned, blue-printed, designed, tested, and finally implemented for the HRIS's transactional and transformational journey for managing human resources.

4.1 Conceptual model of HRIS

Based on the literature review over thirty-five relevant papers, we have classified the entire gamut of HRM into three heads; Key HR Processes, Transactional and Transformational HR Activities under SHRM. Then each of the key HR processes has been grouped under one specific HR function to further map the transactional and transformational HRM activities under that. The first head i.e., Key HR Processes include the following four subheads; HR Acquisition, HR Utilization, HR Development and HR Maintenance. Further, these subheads are linked to specific HRM & SHRM functions that are presented as the final conceptual HRIS model. The below Figure 2 depicts the key HR Processes which are mapped in Table 2 while Figure 3 represents the conceptual HRIS model.



Source: This study.

Figure 2 Key HR processes

Each of these key HR Processes shown in Figure 3, are now being mapped across traditional HRM functions and transformation SHRM attributes to map in the above model is explained in Table 2 given below. Further, the basic theme of the above model is the marriage of Information Science with HRM, the growing SHRM perspective and the HRIS as a tool and platform to deliver the traditional/transactional and transformational HR functions through a single window HRIS; our conceptual model maps HRM functions in an HRIS around key HR processes. Thite, Kavanagh, and Johnson (2012) have given special emphasis on HR metrics for evaluating the efficiency and effectiveness of HRM functions which paves the path for knowing the success of HRIS adoption through implementing or practicing Strategic HRM in organization. Hence all the above processes are strongly subject to be mapped under strategic angle of achieving alignment with organizational goals. All the functions performed right from employee entry to exit is seen and analyzed through cost benefit equations and use of HR metrics is put to practice to see whether HR processes are yielding positive results or not. Various HR Metrics that are integral part of all the above key HR processes include; Yield Ratio, Cost Per Hire, Attrition Ratio, Attrition Cost, Time-taken to Fill Vacancies, Payroll Costs, Absenteeism Ratio, Absenteeism Cost, Benefits Cost, HR Expense Factor, Healthcare Cost, Separation Cost, Vacancy Cost, Down-time/TAT Cost, Outsourcing Cost, Training Cost Factor, Training ROI, Human Capital ROI, Appraisal Process Evaluation, Revenue Per FTE and Career Path Ratio. These metrics later also form the basis for HR Analytics wherein Descriptive Analysis as HR Metrics pave the path for Predictive and Prescriptive Analysis that are conducted for key decision making related to HR (Fitz-Enz & Mattox, 2014).

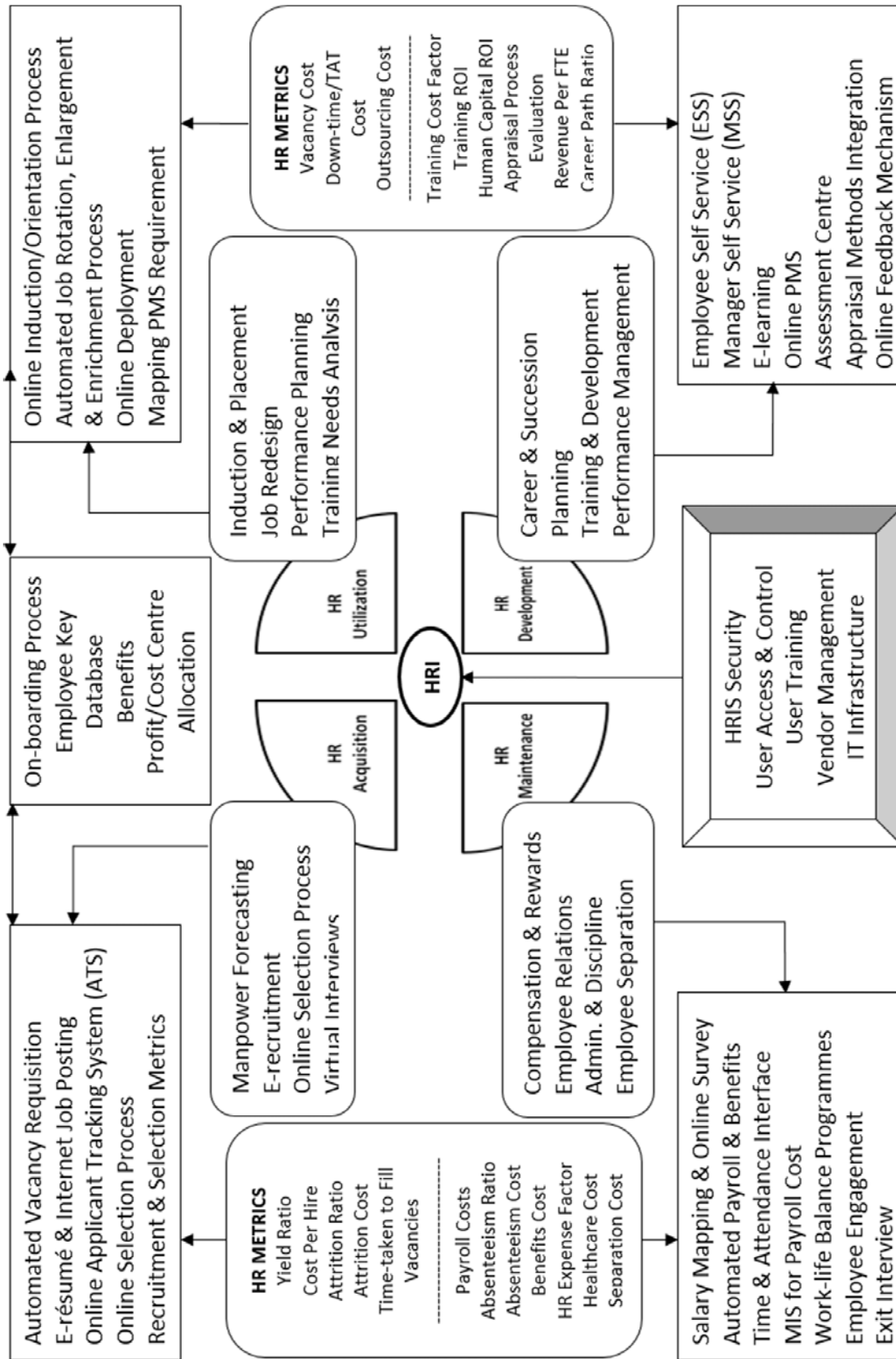


Figure 3 Conceptual HRIS

Source: This study.

Table 2 Mapping of Key HR Processes with Traditional & Transformational SHRM Functions

| Key HR Processes | Traditional HRM Activity | SHRM/HRIS Activity |
|------------------------------|--|---|
| HR ACQUISITION | | |
| Business Plan | Generalized mapping | Business plan with HR requirements |
| Human Resource Planning | Paper based manual work | Online & Electronic |
| Skills Inventory | Paper based manual work | Programmed Method |
| Recruitment & Selection | Paper resume & paper postings Manual short-listing process | E-resume & internet posting Applicant Tracking System (ATS) |
| Selection | Costs directed at attraction Manual review of resume Face-to-face interviews Manual Employment Tests | Costs directed at selection E-review of CVs (scanning) Virtual interviews Online Employment Tests |
| HR UTILISATION | | |
| Induction & Placement | Manual & HR driven process | Automated & line-function driven |
| Job Re-design | No regular jobs reviews, boring from day one | Job rotation, enlargement and enrichment |
| Performance Planning | HR & Line manager driven | Superior/Subordinate driven (MBO) |
| HR DEVELOPMENT | | |
| Career & Succession Planning | HR driven career paths Reactive decision Personal networking | Employees manage their career own Proactive planning with technology Electronic & personal networking |
| Training & Development | Standardized classroom training HR driven process | Flexible/Virtual/Online training Employee driven process |
| Performance Management | Supervisor evaluation Face-to-face appraisal Less focus on result based appraisal methods | 360 degree evaluation Appraisal software (online/offline) BARS, BOS, Balance Score Card, HR Score Card |
| HR MAINTENANCE | | |
| Compensation & Rewards | Manual assessment on paper, time consuming Manual/basic payroll automation Internal equity driven HR driven payroll queries | Accurate automated assessment through market analysis Automated payroll or outsourced Internally and externally aligned Online employee self service |
| Employee Relations | Focus: Employee-Management Union driven process Equal employment opportunity Building & equipment safety Physical fatigue & wellness More task oriented jobs, no focus on work-life | Focus: Employee-Employee Employee driven Intellectual property & data security Ergonomic considerations Mental fatigue & wellness Flexibility through accountability and virtual job performance culture |
| Employee Separation | A routine process with no focus on employee turnover | Highly focused on attrition and Exit interviews for retention |

Source: This study.

5. Conclusion & future scope of work

Summing up the study, the development and journey of HRM to strategic HRM has been promising. The literatures, invariably show that the way human resources were managed three decades ago have seen sea level changes. Expected benefits of introducing machines and softwares for managing HR, have for sure eased-up HR professionals work stations. However, the true predicted paradigm of SHRM is yet to unfold and to be realized. There is a strong need of literature and primary data which should confirm the strategic gains of HRIS in organizations. Case studies either from the company or vendor side will be handy to validate the journey of HRM to SHRM. HRM functions can be immensely leveraged and benefitted by technology, specifically for transactional endeavors and routine HR activities; however, it is transformational tasks and activities that remain at the center of strategic HRM. It is this transformational pursuit that makes HR a strategic business partner to deliver competitive advantage. The social architecture that we come across in literature, endorses the view that technology is mere an enabler for HR and often prone to unpredicted implications. It is ultimately HR who works through technology while understanding the intricacies of data and derived information for managing HR functions at both end, transactional and transformational. Hence, the conceptual model proposed during the discussion, explicitly advises the HR users and professionals to be very careful while working on the integration of IT with HR. One has to be dependent on IT only to an extent which leverages the processes but the wit and knowledge that one can utilize during HR operations, technology unfortunately doesn't cater to. This study is basically a framework for HRIS users who should try to ensure that their operational, transactional needs are sufficiently met through HRIS so that they can reap the benefits of strategic HRIS. The conceptual model proposed in the discussion carries scope of empirical research to see how, this HRIS model can leverage strategic HRM.

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