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Research Article

Human Resource Information Management System (HRIS) Automation

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ABSTRACT

This paper reviews the literature on research performance with the focus on human resource management (HRM) practices and its advancement to next level towards automation, to meet performance optimization, Information technologies have developed Robotic Process Automation (RPA) which can automate the HRMS.RPA availability as services-oriented architecture (SOA) which is availability on demand is required since the cost of each functional license is very high, smaller organizations cannot afford it to get the benefits for the RPA. SOA saves cost of ownership and makes it affordable, as organization don't have to take the whole bunch of services/licenses at the starting itself, which results to better management of resources and increased efficiency and with minimum spend.

Key Words: HRM, HRIS, Cloud, SOA, RPA, On Demand, EDP, SaaS, Enterprise Portal, Social Networking, Gartner.

1. Introduction

Human resource Information management system is essentially a software application which is a newer avatar of older Payroll and account management system which was running from decades in many organizations in one form or the other. Earlier the EDP department of the organization were supposed to maintain the HR information and support the working people needs and management. These simple payroll and financial management system had very few and basic functionalities, as the organization grew, they hired more people resulting to more load on the system which became more slower and was unable to support in planning, forecasting, critical data analysis etc.

The last decade has seen a significant increase in the number oforganizations gathering, storing and analyzing human resources data usingHuman Resource Information Systems (HRIS) (Ball, 2001; Barron et al.,2004; Hussain et al., 2007; Ngai et al., 2006). Strategic value can be derivedusing HRIS tools that assist decision-making concerning vital HR functions(Farndale et al., 2010; Troshani et al., 2011). HRIS gave the informationneeded for the strategic planners to forecast future workforce demand andsupply.

1.1 The Need

To ensure that management practices support business needs, organizations must continually monitor changing environmental conditions and devise HRM strategies for dealing with them. Human Resource Planning is the procedure used to tie human resource issues to the organization's business needs. Human Resource Information Systems (HRIS) have become one of the most important tools

for many businesses. Smaller organizations with 10 plus employee are also using it and ripping the benefits of HRIS.

HRIS is supporting organizations in many ways which were never thought earlier, it is resulting to huge cost saving by better management of resource specially in difficult economic times, more and more organization are using or planning to start HRIS.

Until recently the available HRIS were expensive and were way beyond the purchasing capacity of the smaller organizations. However, with its increasing capability and affordability, technology has largely had a positive impact on the HRM function, particularly at the transactional leveland now it is largely up to the HR profession to exploit technology's potential fully by taking it to the next level of transformational impact.

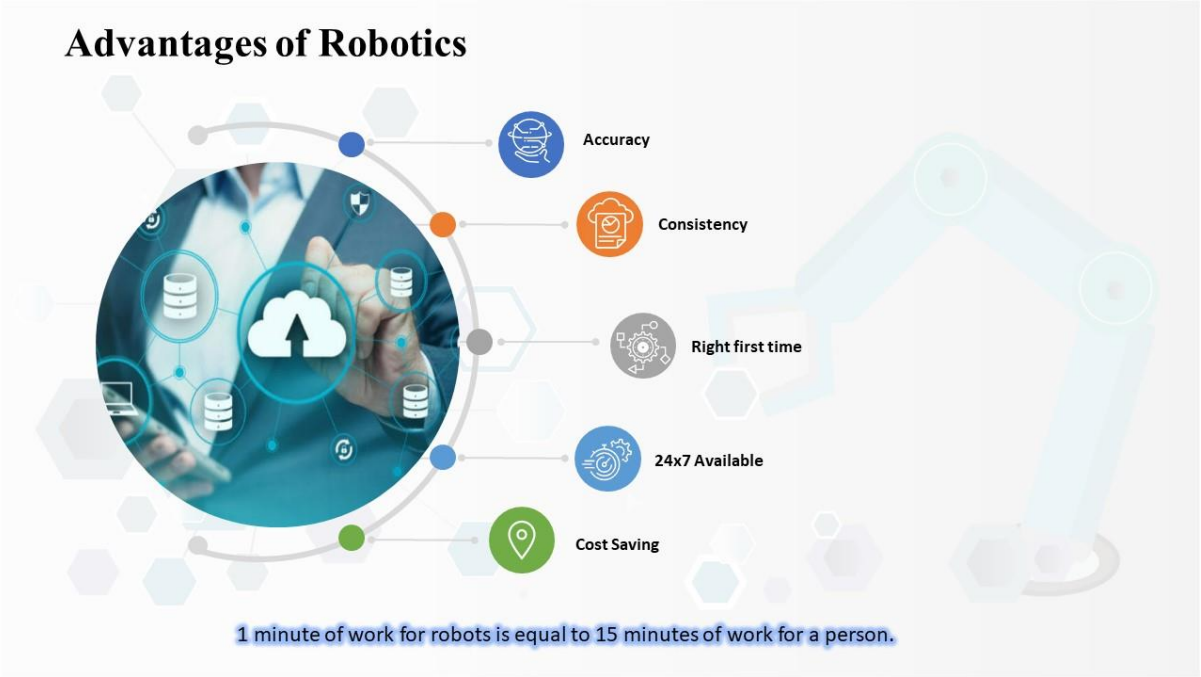
The next level of current advancement of HRIS is making it automated with the help of RPA, where the software robots mimics like human working and takes care of all the daily functions/working of humans and make services available 24x7x365 for the entire organization which may be spread in different geographies utilizing the resources to the optimized level.

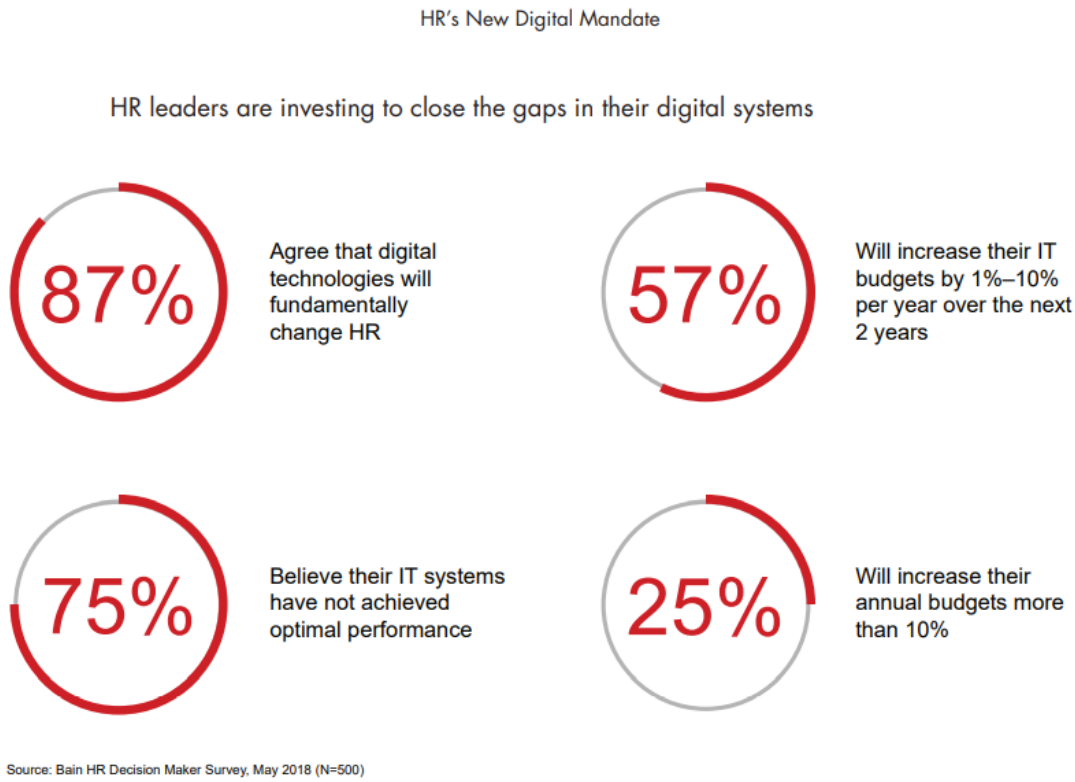
1.2 What is RPA

The word robotics was first introduced to public by Czech writer Karel Capex in his play Rossum's Universal Karel (R.U.R) in 1920, the word robot is a Slavic word meaning forced labour/work. Robots were developed to do a difficult and dangerous task which may be repetitive in nature which human could do with greater difficulty, in order to increase the efficiency and reduction in cost.

Robotics and now divided into hardware and software robots. Hardware robots are used to do physical task such as car manufacturing, Bomb disposal etc. and software robots are software applications which perform daily repetitive task which humans do using computers such as in banking, finance, and office work etc. The process of automating the functional process are call (RPA) Robotics Process Automation.

Advantages of the RPA is described below in the figure,





1.3 Licensing system of RPA and Cost.

Determining the price of an RPA solution depends on the number of bots and software components that make up their RPA deployment. But, on average, a single bot (or unit) tends to cost somewhere between $5,000 and $15,000.

UIPath Studio License (Annual): $2000 - $3,000. Orchestrator License (Annual): $20,000 similar are the rates of other major RPA applications. These cost of owning these RPA are very high.

We can split the cost of owning RPA into 3 parts

- Development
- Maintenance
- Infrastructure

Among the above three cost the cost of licence is the most expensive followed by development and maintenance, for a smaller organisation with limited peoples it becomes very expensive although it may be saving time, but overall ROI takes many years to balance but on the other side a larger organisation with high level of people can get maximum benefit out of it, as there are many people using the services of RPA and it is repeated in different organisation departments.

1.4 Service-Oriented Architecture(SOA)

One of the major problems during this technological evolution has been the frustration associated with frequent system upgrade cycles. SOA may be a solution, as it converts monolithic and static systems into modular and flexible components. The self-contained services in an SOA are loosely coupled, like a set of Lego pieces, and can be reconfigured to suit a business process and end-user application rather than being hard coded together, as they were in the past. SOA is about "efficient modular

design and deployment, and reusable software is at the heart of the architecture" (Macy, 2007). RPA software can also be provided on SOA, based on the functions and usage of the modules, which will result in reduction of cost in acquiring the benefits of RPA.

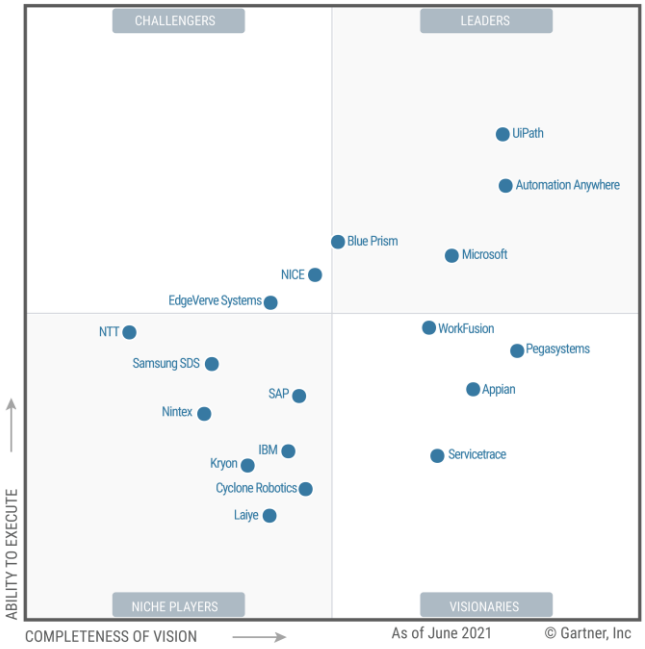
2. Some major RPA software's

Although there are many cloud-based applications available with varying functionalities, but some of the leadings are below,

1. Automation Anywhere
2. Blue Prism
3. UiPath
4. Pega
5. Nice Systems
6. Visual Cron
7. Kofax
8. Kryon

Below are the positions of various cloud basedRPA as assessed by Gartner,

Figure 1: Magic Quadrant for Robotic Process Automation



Source: Gartner (July 2021)

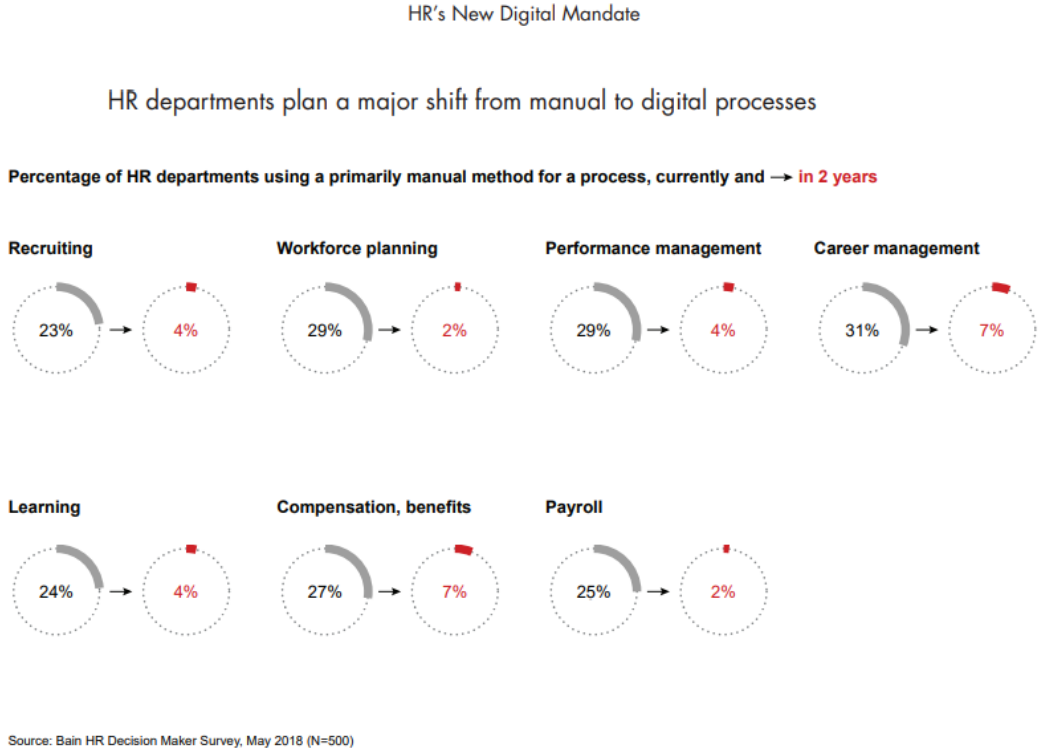
3. Key functionalities of Cloud based HRIS which can be automated.

Some of the key functionalities of cloud based HRIS which make them very useful and effective in management are,

1. Hiring Process
2. Evaluation Process
3. Employee Lifecycle
4. Payroll
5. Org Structure
6. Rewards and Recognition

7. Expenses and Reimbursement
8. Operations
9. Training
10. Security and access Management

The below researched data figure describes about the current and futuristic planning going digital.



4. Benefits of using Cloud(SOA) based RPA

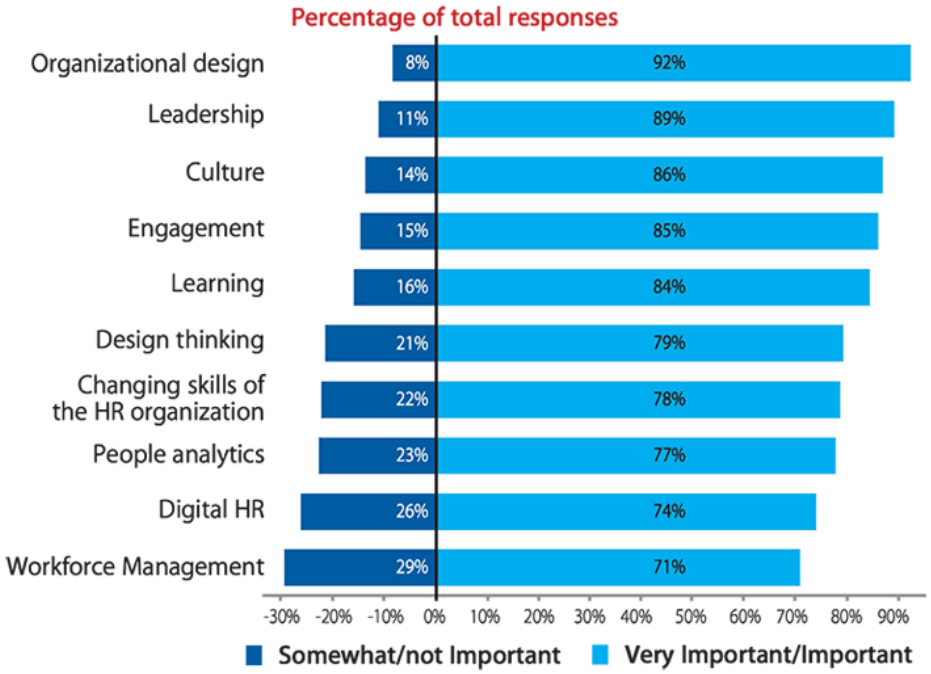
There are several benefits for an organization if they use cloud/ SaaS based RPA, some of them are,

1. Increase in efficiency of the organization
2. Better management of resources
3. Flexibility in working
4. Better accountability
5. Employee satisfaction
6. Improved transparency
7. Support in planning
8. Ease to follow new government regulations
9. Cost saving.

5. HR Trends Ranked in Order of Importance and Automation.

As per various reviews the reduction of cost of the HR resources amount to around 50% whereas the overall reduction on automation provided efficiency of around 30%post deploying RPA.

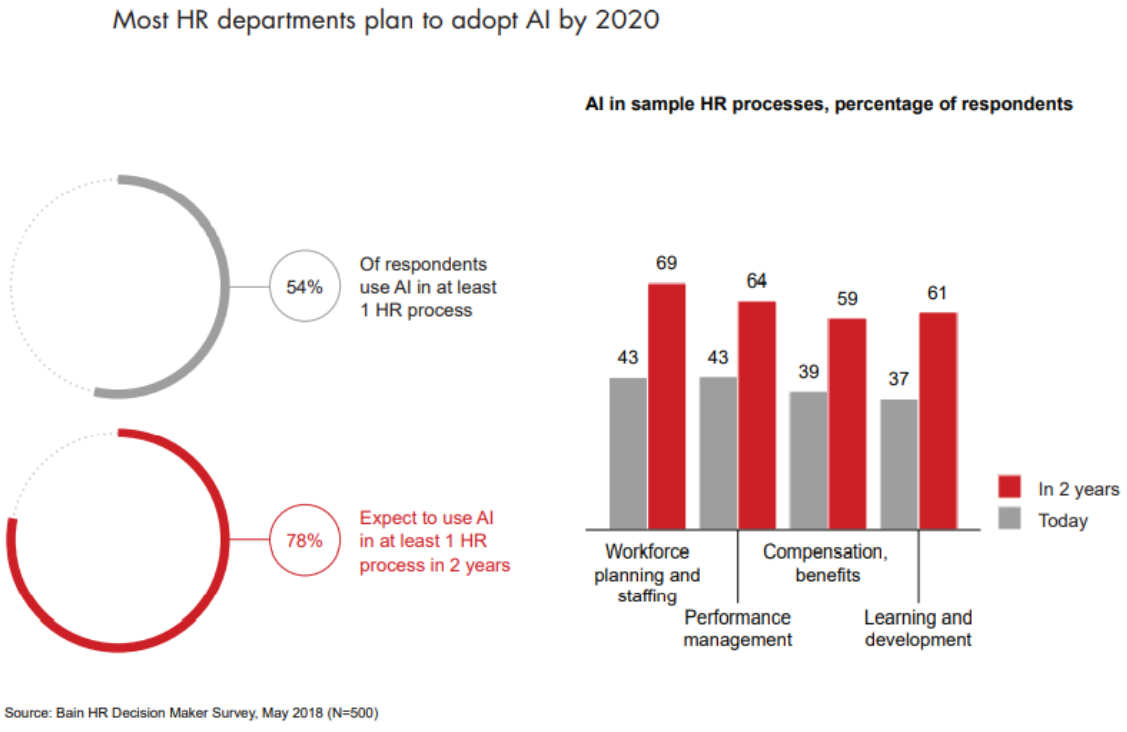
Below figures describes the various function of HR which can be automated as per the organisation requirement/Plan.



Source: Deloitte University Press Global Human Capital Trends

https://www.supplychain247.com/article/gartners_2017_magic_quadrant_for_cloud_human_capital_management

As per various research the adoption plan of automating the HRMS using artificial intelligence is described below.



The below figure describes thevarious functions of HRMSranks wise, cost saving

HR's New Digital Mandate

HR is turning to digital for reasons beyond cost savings

Process	Top 3 ranked benefits in order			Average rank of cost savings
Payroll	Cost savings	Employee accessibility	Support company growth	1
Recruiting, talent acquisition	Finding best talent	Speed	Lower cost per hire	3
Workforce planning and staffing	Labor forecasting accuracy	Productivity	Employee engagement	6
Compensation, benefits	Speed	Service quality	Standardization	6
Career management and planning	Development efficiency	Better coaching	Employee goal tracking	7
Performance management	Appraisal quality	Easier to use	Effectively measure performance	9

Source: Bain HR Decision Maker Survey, May 2018 (N=500)

6. Conclusion

Forecasting the future is very difficult. One reason for this difficulty is that the field of HRIS is not just about what might become technically possible It is, essentially about systems that serve humans and human enterprise.

HRIS currently is a full fledge arm of IT, which supports the current requirement of the organization in all weather. With the advent of RPA, Cloud and SaaS based information system, it is very widely accepted in small to large organization due to its affordability and adaptability. Technology is not a substitute for managerial competence and employee discretionary behavior (Armstrong, 2005). It cannot be a message it can only be a messenger. It is also impractical to expect information systems to supplant the soft functions of the HR department, such as an online electronic tutor replacing a good executive coach (Stanton & Coovert, 2004). Finally, technology has proven its importance, but people are simply more important.

For all size of organization who are planning to further optimize the HRMS, RPA is the tool which can reduce the cost to most optimized level, but the RPA can be adopted by smaller organizations when it is available on Cloud based (SOA), where they don't have to pay for the costly licenses, and it is available on modules based and per demand. The smaller organization will pay only for the usage part of the RPA tools, which makes automating HRMA more affordable.

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