A Survey on - Human Resource Planning System(HRPS)

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ABSTRACT

The world has become more digitized. Businesses are depending on technology to help them enhance their business processes. Companies are looking for an information system that can handle massive workloads. This is where Human Resource Planning (HRP) systems come into play. An HRP integrates different subsystems into one huge system that shares one database. It enhances productivity and brings more profit to companies (Hasselbring, 2000). The purpose of this paper is to address the effects of HRP systems on organizations. The paper will discuss these issues and present a scheme to overcome them. Research was carried out with articles, as well as books, to gather the suitable resources that will help us in discussing the factors that contribute to HRP systems. Many of the articles are from IEEE journals. A large volume of data was collected that represents millions of users.

Keywords – Financial Resources, Human Capital Management, Human Resources, Human Resource Management, Human Resource Planning, Technical Resources.

INTRODUCTION

Every organization requires diverse resources for its growth and development. Among them Human Resources (HR) Financial Resources (FR) and Technical Resources are important. Of these three, Human Resources (HR) plays most important role because it is the Human Resources (HR) that will determine the potentialities of an organization in terms of its production, marketing and expansion.

1. Definition of Human Resource Planning

HRP is a process by which Human Resources are identified, determined and planned that an organization needs in order to meet both its short term and long term requirements. Bulla and Scoh (1994) define Human Resource planning (HRP) that "it is the process for ensuring that the Human Resources requirements of an organization are identified and plans are made for satisfying those requirements".[3]

Human Resources planning is based on the concept that people are the most important strategic resources of an organization. Generally it is concerned with suitable resources to business needs both in longer tern needs and in shorter term needs in terms of both quantity and quality. It also answers two fundamental questions "how many people" and "what kind of people".

Human Resource planning deals with the bigger issues of the methods of employment and development of people for the purpose of the improvement of effectiveness of an organization. It therefore plays an important role in strategic Human Resource Management.[12]

2. Human Resources Planning as a part of Business Planning

Human Resource Planning (HRP) is an integral part of Business planning. The Strategic planning process will define the changes protected in the scale and the types of activities carried out by the organization. It will identity the core competences the organization needs to achieve its goals. In as much as strategic business plans are articulated, human resource planning interprets them in terms of people requirements. However, it may influence the business strategy by drawing attention to the ways of development and deployment of people more effectively for the achievement of business goals. It will also focus any problem that may have to be solved in order to ensure that the people required are available and are capable of making the necessary contribution. In this context, Quinn Mills (1983) observes that "Human Resource Planning is a decision- making process that combines three important activities. Identifying and acquiring the right number of people with the proper skills.

- Motivating them to achieve high performance.

- Creating interactive links between business objectives and people-planning activities.

2.1 Types of HRP

There are two types of Human Resource Planning (HRP).

- Hard Human Resource Planning
- Soft Human Resource Planning

HRP based on quantitative analysis in order to ensure that the right number of the right sort of people are available when needed is called Hard Human Resource Planning.

HRP concerned with ensuring the availability of people with the right type of attitudes and motivation and commitment to the organization is called Soft Human Resource Planning. Marchington and Wilkinson (1996) describe that "Soft Human Resource Planning is more explicitly focused on creating and shaping the culture of the organization so that there is a clear integration between corporate goals and employees values, beliefs and behaviours". They also observe that "the soft version becomes virtually synonymous with the whole subject of Human Resource Management".[2]

## 3. HUMAN RESOURCE PLANNING VERSUS MAN POWER PLANNING

Human Resource Planning mainly deals with broader issues about the employment of people while Man Power planning is concerned with the traditional quantitative approaches in vogue in older times. According to Liff (2000), such approaches arrive from a rational top-down view of planning in which well tested quantitative techniques are applied to long term assessments of supply and demand". She further observes that there has been a shift from reconciling numbers of employees available with predictable stable jobs, towards a greater concern with skills, their development and deployment.

3.1 Stages of HRP:

HRP comprises three stages as mentioned here under. Forecasting future people needs (Demand Forecasting)

- Forecasting the future availability of people (Supply Forecasting)

- Evolving plans to suit supply and demand

.• Casson (1978) views that "this Conventional wisdom represents Human Resource Planning (HRP) as an all embracing policy making activity producing on a rolling basis, precise forecasts using technically sophisticated and highly integrated planning systems

Data Flow of HRPS
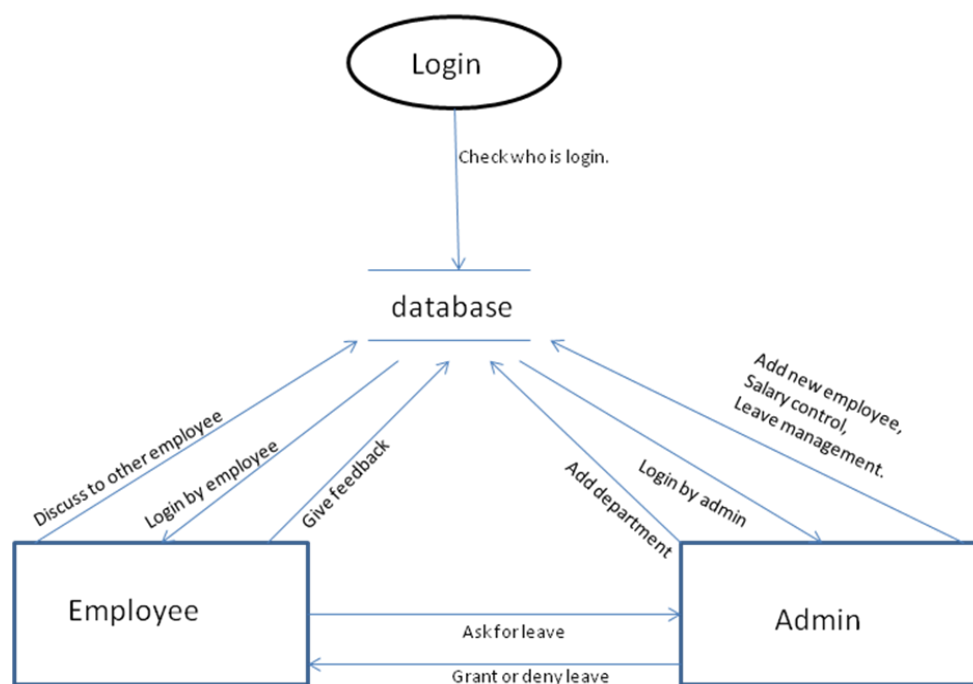
DFD Level 1

3.2 Why Firms Invest in HRP?

Why do firms invest in HRP given the different alternatives for information integration in a business? The answer for this question lies between either technical gains e.g. replacing legacy systems, or for business reasons e.g. improving operational performance and efficiency (Nicolaou, 2004). Many technical reasons exist including the replacement of disparate systems into a single integrated system (Hitt et al., 2002).

The replacement of legacy systems was very important for the boom of HRP during the late 1990s when companies wanted to replace their legacy systems during the year 2000 (Y2K) with a more Y2K compliant solution so they have invested into HRP systems (Anderson et al., 2003). HRP also provides a tested system security basis which promises to keep the organization up to security standards and for providing data security (Fuß et al., 2007). Business reasons also exist. This includes automation and reengineering of business processes

(Hitt et al., 2002). Other business reasons provided by Federici (2009) are better management, better operations, better information availability and reengineering procedures, which are all reasons for acquiring HRP.

Other business reasons include enhancing cooperation and teamwork between employees in the company. In addition, benefits expected from implementation of HRP systems include tangible benefits like reducing costs, reducing operations time, and a lean organization, while intangible benefits like information integration, better information quality, and increase in customer satisfaction also exist (Loh et al., 2006; Nicolaou, 2004).

Such perceived benefits are expected because HRP help make production inside manufacturing companies more efficient by integrating information from other departments like sales and procurement into the production 3 Communications of the IBIMA system, which as a result helps eliminate costs and improve production schedules (Matolcsy et al., 2005). This discussion leads to the observation that measurements of business performance should accurately match the reasons behind HRP implementation unique to each specific organization.

4. HRP Projects

HRP systems are usually implemented as projects. HRP implementation projects usually involve selecting the HRP vendor, establishing business process reengineering, implementation, and evaluation of the adopted system (Wei, 2008). HRP implementation projects normally involve internal IT & business personnel from the adopting firm as well as external consultants from implementation partners in order to be successful. This shows how human resources intensive HRP projects are. It is also worth mentioning that a good implementation partner is considered one of the most important factors for the success of HRPs projects, and is another addition to the complexity of HRPs implementation projects (Dai, 2008). Due to the complexity of HRPs projects it will be important to discuss HRPs project implementation issues and HRPs project failures in the next sections to further understand the introduction of HRP into organizations and how it contributes to the relationship between HRP and business performance.

4.1 HRP Implementation Issues

There are different utilization issues that face business that decides to go forward and implement HRP. HRP requires a big portion of time, personnel, and capital (Laukkanen et al., 2007). Most of this cost is not associated with the HRP software package itself but with its implementation, including customizations, configurations, and consultation services to implement it (Hitt et al., 2002). The time needed to establish an HRP system is at an average of 21 months. A Sample study of Taiwanese firms also found that it takes about 11 months on average to implement the HRP system (Huang et al., 2009).

A similar period was suggested by Nicolaou (2004) who stated that HRP implementation projects take on average 8 months. In all cases, Gupta et al. (2004) mentioned that HRP projects frequently require more time and capital than what was planned due to the heavy integration needed on the technical and business sides. It can be said that HRP projects frequently involve business process reengineering (BPR), can include customizations, and require good budgeting and time management in order to lead to successful business performance gains (Velcu, 2007).

4.2 HRPS Project Failure

Most of the implementation failures for HRP were early HRP adoptions which did not have strong business justifications (Gupta et al., 2004). This was attributed to the misalignment between the objectives from the HRP implementation and the strategic organizational and IT goals. If such a misalignment exists, it can cause the business to lose the advantages of HRP systems. On the other hand, investing into HRP systems without any objective other than following the market or industry trend might also cause an HRP project to fail (Kang et al., 2008).

5.Theoretical Considerations: IT and Business Performance

Information technology is a general term which includes many technologies. HRP systems can be thought of as a specific instance of information technology. Therefore, in the following sections a discussion of the impact between IT and business performance will be discussed. Business 5.1

5.1 Performance and IT

In this section, an exploration for the relationship between information technology and business performance will be reviewed. One of the most important business performance gains to consider is productivity. Rei (2004) discussed the increase in labour productivity by implementing software. On the other hand, Pilat (2004) has refuted such claims because they were mainly macro-economic improvements found in nation-wide productivity studies as this of Rei (2004). Such findings had great variations between countries and have also been criticized as being too aggregate to give an accurate picture. Therefore firmlevel analysis was executed by researchers. Pilat (2004) reported that a study on Canadian firms in 1998 shows that as a company adopts IT involving software, hardware, and communication technology, the relative labour productivity, as compared to non-IT users, gets better.

However, software was found to have the least effect when compared to hardware and communication technology (which is relevant to HRP as it is mainly software). When many IT technologies are combined, it was found to generate greater positive effects on labour productivity. Hamilton and Asundi (2008) also reported benefits from IT investment in SMEs. In one of the food industry companies, they found that an increase in sales and an increase in inventory turnover were achieved after adopting IT. Such payoff from IT was said to be achieved after a period between 3 to 6 years (Hamilton & Asundi, 2008). Such delays in benefits of IT were supported by many research e.g. (Pilat, 2004), who also added that studies also suggest that the greatest improvements in business performance happen in the early years of adoption and then slows down later. In the end, it could be said that previous research suggest that a mixed result exists when analyzing the effect of IT on business performance where some studies supported a positive relation while others suggested that companies adopting ERP did not perform financially better than non-adopting companies (Nicolaou, 2004).[7]

5.2 The IT Productivity Paradox

Some of the research conducted before, said that IT investments had no or slight effect on the business performance (Ross, 2002). In the time between 1980 and 1990, research findings indicated that companies which adopt IT technologies had no additional gains in productivity, and it was claimed later that IT adoption actually slows down the growth in productivity. However, lately, research indicates that IT can actually

contribute to productivity improvements (Anderson et al., 2003; Pilat, 2004; Rei, 2004). This phenomenon of vanishing returns on IT investments was called the productivity paradox and can be described as Pavlou et al. (2005) stated: "previous literature has not conclusively shown that IT investments have a positive effect on either firm or process performance."

This phenomenon 5 Communications of the IBIMA was named as a productivity paradox because the findings on productivity contradicted the expectations of IT investors who thought that IT investments would improve business performance (Anderson et al., 2003). Researchers have added that specific factors facilitate the positive relationship between IT and business performance like organizational change, innovation and increased employee skills (Pilat, 2004). Such factors which contribute to the phenomena of the IT paradox were also pointed out by Hamilton and Asundi (2008) and include the false measurements of output to measure productivity, measurements done before the long payoff time until when returns on IT investments accrue, economy-wide measurements errors due to rearrangements of output, and mismanagement.

 False measurements were supported by other research like Almutairi (2007) and Rei (2004). In addition, the research which was involved in the productivity paradox usually measured the effect of IT on the services sector (Pilat, 2004). IT investments in the services sector may be misleading because their IT contributes to better customer-service quality (which is their main business goals required for them from adopting IT) more often than administrative and internal efficiencies. Another issue is that in the early days of IT, the full adoption of the technology was slow with little activities towards development of employee skills to use the technology and with business process reengineering. This has been defined by (Pilat, 2004) as the process of "IT diffusion". In addition, the studies pertaining to the productivity paradox have been measuring the IT effect on business performance too early after adoption before benefits materialized. The paradox was also attributed to management strategies that prohibit the efficient usage of IT technologies, and is currently heavily refuted and found to be incorrect (Pilat, 2004).

6.Application: HRP and Business Performance Benefits

 This section will discuss the relation between HRP systems as a specific example of IT with business performance and productivity. HRP was found to save costs (Huang et al., 2009; Kang et al., 2008; Loh et al., 2006; Wieder et al., 2006), facilitate business processes (Gattiker & Goodhue, 2005), and provide better information management (Federici, 2009). Operational aspects like lead time can also be shortened by utilizing HRP systems (Cotteleer & Bendoly, 2006; Gupta et al., 2004; Kang et al., 2008).

 According to Velcu (2007), faster fulfilment of customer orders can be achieved using HRP systems. Gupta et al. (2004) and Matolcsy et al. (2005) also agree that HRP systems provide more customer satisfaction by reducing time of delivery of products. Although literature seemed to agree with the hypothesis that HRP improves performance, there were still some concerns expressed by some scholars that there might be reverse causality between pre- and post- implementation with a drop in some performance indicators (Hitt et al., 2002).

 Some researchers tried to give reasons for this. For example, Fuß et al. (2007) suggest that services-sector business (like banks) adopting HRP usually anticipate and utilize HRP systems for effectiveness more

commonly than efficiency, therefore cost reductions and productivity might not be as important for them as better quality business processes and better information quality.

For such HRP adopters making efficiency and productivity measurements is inaccurate and can have negative causality. Therefore, previous research has found contradicting findings regarding the effect of HRP systems on business performance. While some researchers have found that HRP systems can affect overall business performance positively, others have only found HRP systems to affect specific areas Communications of the IBIMA 6 and not the overall business performance.**[3]**

7. Factors of HRP and Performance

Benefits Beside the factor of the stage of measuring business performance other factors also exist. For example, Hitt et al. (2002) stated that there might be an effect caused by the industry status and shocks that might occur in the market when measuring business performance. This might lead to incorrect measurements and therefore misconceptions. Velcu (2007) agreed that business performance might be affected by the industry of the business.

Proper management of IS implementations like the ones involved in HRP can also be reported as an important contributing factor that affects performance gains from the system (Nicolaou, 2004). Management should also set objectives from HRP implementations. On the other hand, things like "ERP size" can be a contributing factor of its effect on business.

This means the number of implemented modules according to the context of the research by Kang et al. (2008). Kang et al. (2008) also mentioned that the alignment between strategic business goals and ERP objectives is an important factor for generating business benefit from the HRP system.

7 Communications of the IBIMA While it was commonly believed that HRP implementations based on business goals are more successful, Nicolaou (2004) found that business oriented HRP implementations do not necessarily result into better financial performance; however technical driven implementations were found better performing in terms of Return on Assets (ROA)[7].

Huang et al. (2009) found that companies implementing HRPS from multinational vendors had better performance improvements than companies implementing local vendor HRPS. It was stated that local Taiwanese HRPs can actually diminish performance after implementation. This was said to be more significant with companies involving international business where multinational HRP vendors can provide better functionality to cover such needs. This is another indicator that factors like the HRP vendor and specific usage of the HRP system can lead to different outcome concerning business perfo**rmance**.

8. Research Methodology

There are many previous quantitative research conducted about the relationship between ERP and business performance. Such research involved surveys and large amount of quantitative data e.g. (Gattiker & Goodhue, 2005; Hitt et al., 2002; Huang et al., 2009; Laukkanen et al., 2007; Wieder et al., 2006). However, it is recommended that the effect of HRPS on business performance should also be researched by a qualitative study. This was recommended by Wieder et al., (2006) when they have recommended a field study as the form of future research. As a result, for this research paper a single case study was chosen and qualitative methods were

used. The case study was carefully chosen by the authors with the goal of selecting a successful example of HRPS implementation. This was done by taking a theoretically critical case study of successful HRPS implementation. In addition, the company was selected so that it would have implemented and stabilized with the HRPS since a sufficient period of time, the company has maintained a successful business performance before HRP implementation, and the market of the company was stable to limit market fluctuations effects on business performance.

8.1 HRPS Implementation Schedule

In January 2000 an initial Go-live with a few modules took place ending a semifinished implementation in a year. The phased Go-live (continuation of implementation sub-projects) schedule was: Foundation, Sales & Receivables and Financials (GL) in January 2000 (those are the essential most important modules), production in March 2000, and Purchasing, payables, Fixed assets and budgeting in June 2000. The IT manager explained the reason for this phased Go-live as to minimize risks and not cause distraction to the business as much as possible. According to the IT manager cutting the Go-live process means more stability.

From September 2000 till May 2001, continuous development of reporting Communications of the IBIMA 12 interfaces and solutions linked to the HRP system was done by consultants. This was needed as the employees discovered that some of the reports they required were not available with the ERP package. It could be said that the "initial Go-live" was on January 2000 when all data was transferred and entered on the new system and the "final Go-live" was on May 2001 when the reporting based on the new data input was realized. Therefore total implementation duration was nearly 2 years. This indicates that sufficient time for the HRPS implementation was allocated.

8.2 Problem Formulation:

In the existing system the hrps are done only manually but in proposed system we have to computerize the hrps using this application.

. ● More man power
. ● Time consuming.
● Consumes large volume of pare work.
● Needs manual calculations.
● No Direct role for the higher officials.

8.3 Planning of Work Structured Approach:

The first step in selection of a new system is to adopt a structured approach to the process. The set of practices are presented to all the stakeholders within the enterprise before the system selection process begins. Everyone needs to understand the method of gathering requirements; invitation to tender; how potential vendors will be selected; the format of demonstrations and the process for selecting the vendor. Thus, each stakeholder is aware that the decision will be made on an objective and collective basis and this will always lead to a high level of co-operation within the process.[9]

8.4 Focused Demonstrations:

Demonstrations by potential vendors must be relevant to the business. However, it is important to understand that there is considerable amount of preparation required by vendors to perform demonstrations that are specific

to a business. Therefore it is imperative that vendors are treated equally in requests for demonstrations and it is incumbent on the company [and the objective consultant assisting the company in the selection process] to identify sufficient demonstrations that will allow a proper decision to be made but will also ensure that vendors do not opt out of the selection process due to the extent of preparation required

. 8.5 Objective Decision Process:

"Choosing which HRPS to use is a complex decision that has significant economic consequences, thus it requires a multi-criterion approach." There are two key points to note when the major decision makers are agreeing on selection criteria that will be used in evaluating potential vendors. Firstly, the criteria and the scoring system must be agreed in advance prior to viewing any potential systems. The criteria must be wide-ranging and decided upon by as many objective people as possible within and external to the enterprise. In no circumstance should people with affiliations to one or more systems be allowed to advise in this regard.[8]

8.6 Full Involvement by all Personnel:

The decision on the system must be made by all stakeholders within the enterprise. "It requires top management leadership and participation .It involves virtually every department within the company". Representatives of all users should: Be involved in the project initiation phase where the decision making process is agreed;

- Assist in the gathering of requirements
;• Attend the Vendor Demonstrations
;• Have a significant participation in the short-listing and final selection of a vendor.
- The implementation of an HRP system takes a significantly longer time and level of resource than the selection process. However, the extent of the implementation will be profoundly influenced by the level of resource and objectivity within the selection. Companies that use a proper System Selection Methodology reap the benefit not only during the implementation phase but also and most significantly during the life of the ERP System.

9.Facilities Required for Proposed Work Department Management Module:

Used for managing the Department details.

- **Leave Module:** Used for managing the details of leave.

- **Designation Management Module:** Used for managing the information and details of the designation**.**

.• **Login Module:** Used for managing the login details

.• **Users Module:** Used for managing the users of the system.

- **Discussion Module:** Used for discussion and thought sharing employs and Admin.

10.Benefits of HRP Systems

- Improving integration, flexibility
- Fewer errors
- Improved speed and efficiency
- More complete access to information
- Lower total costs in the complete supply chain
- Shorten throughput times

- Sustained involvement and commitment of the top management
- HRPS can integrate the information on resource planning
- Stakeholder is aware that the decision will be made on an objective

11. FUTURE OF HRP SYSTEM

- **Integrates the front and back office to enable an "information visibility**" strategy that pushes the right information to the right people at the right time through the right communications channels.
- A competitive strategy that integrates a centralized, core HRPS system with highly specialized solutions.[5]
- In 2001, $4 billion (or 20%) of the $20 billion of total vendor revenue was spent on extensions to the ERP system. In 2006, AMR predicts this percentage will increase to 50%.

12. CONCLUSION

The success of human resource planning mainly depends on the will of the organization to devise such plans that will attract people to work in an environment of peace, tranquility, progress, growth and development of both employer and employee. It is possible for any organization to evolve and implement a sound HRP, if it is based on quality + quantity +spirit of Harmony among the people that they recruit.

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