

# EN LA MISIÓN DE ESCOGER UN SISTEMA DE INFORMACIÓN DE RECURSOS HUMANOS (SIRH) EFECTIVO – EVALUANDO SU ROL Y FACTORES CLAVES DE ÉXITO

## ON THE QUEST OF CHOOSING AN EFFECTIVE HR INFORMATION SYSTEM (HRIS) – ASSESSING ITS ROLE AND KEY SUCCESS FACTORS

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### RESUMEN

Un Sistema de Información de Recursos Humanos (SIRH) efectivo es crítico en las organizaciones de hoy, de modo de lidiar con una serie de asuntos tales como mayores demandas organizacionales, un mayor uso y necesidad de información, presiones continuas de reducción de costos, así como hacer de RRHH un socio más estratégico del negocio. Este artículo resalta las principales razones consideradas por las organizaciones al momento de introducir un SIRH; además de elaborar un marco de dos tipos de dimensiones para evaluar la efectividad del sistema (cualitativa y cuantitativa), y dos facilitadores claves para sustentar su éxito (afinidad organizacional y arquitectura del sistema). También discute los principales desafíos y problemas enfrentados por organizaciones al momento de implementar un SIRH.

**PALABRAS CLAVES:** Gestión de información, Efectividad organizacional, Recursos Humanos, Sistemas de información.

### ABSTRACT

An effective HR information system is critical in today's organizations, in order to cope with a number of issues such as increasing organizational demands, a more extensive use and need of information, continuous pressures to reduce costs, as well as making HR a more strategic business partner. This paper highlights the main reasons that organizations consider when introducing an HRIS; in addition to develop a framework of two types of dimensions for assessing the effectiveness of the system (qualitative and quantitative), and two key enablers to sustain its success (organizational suitability and system architecture). It also discusses additional issues and challenges faced by organizations when implementing an HRIS.

**KEYWORDS:** Information management, Organizational effectiveness, Human resources, Information systems.

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## I. INTRODUCTION

A Human Resource Information System (HRIS) has become a key enabler to increase organizational performance and effectiveness. An HRIS can be defined according to Tannenbaum as “a system used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information about an organization’s human resources” (Haines and Petit, 1997, p. 261). The functionality and purpose of an HRIS has become more complete and complex in the last years, in response to greater organizational demands, as well as more advanced IT solutions. Initially, the system was meant in personnel management to support transactional processes, as well as maintaining control over operations. Now-a-days, technology has enabled to use more sophisticated applications, with the purpose to improve the decision making process and support global competitiveness. As a result, the human resources professional is expected to be liberated from transactional work, in order to develop a service orientation focus and participate in more strategic and organizational matters (Haines and Petit, 1997).

The literature suggests that the role and contribution of an HRIS depends on what motivates to the HR function to introduce a new information system (IS): operational, rational or transformational drivers (Torrington et al., 2008). As every organization has different purposes, business context, organizational culture, resources, among others, the HRIS effectiveness and usage depends on the kind of criteria considered important for such organization.

The objective of the paper is to assess the role and key success factors of an effective HRIS for all members of an organization. To achieve this objective, the authors have undertaken a literature review of key articles on the subject matter to answer the following research questions:

1. What is the role and purpose of an HRIS?
2. What kind of criteria should be considered for assessing the effectiveness of the system?

To answer these questions, the paper will be structured in three parts. Firstly, it will describe the role of an HRIS, it will outline the driving forces of organizations to introduce an IS, and will explain how information can be used to increase HR capability and manage HR practices. Secondly, it will discuss about the two major criteria (qualitative and quantitative) to assess the effectiveness of the HRIS, as well as the two key enablers to achieve effectiveness (organizational and system architecture). Lastly, it will make a critical analysis of the existing issues and challenges that organisations confront, when implementing and operating an HRIS.

## II. THE PURPOSES OF INTRODUCING AND DEVELOPING AN HRIS.

Why organizations want to implement an HRIS? What is its role and contribution? The reasons are multiple and may depend on strategic, as well as practical reasons. In general terms, an HRIS is a response to achieve cost effectiveness, reduce administrative workload, standardize HR processes or simply add strategic value in the decision making process of the organization.

There is consensus among scholars and practitioners to consider an HRIS as a powerful tool to enhance the HR capability of an organization. There are three main drivers, according to the capability model of Reddington, to aim that objective: (1) Operational, i.e. cost effectiveness is intended by reducing the headcount and the cost of the services; (2) Rational, i.e. improve the services to managers and employees, who are increasingly demanding; and (3) Transformational, i.e. focus on the critical strategic drivers of the organization (Shrivastava and Shaw, 2003; Torrington et al., 2008). The implementation of an HRIS enables the automation of processes, which addresses the operational driver. Alternatively, the inclusion of new applications to the system permits to tackle the rational dimension. However, to progress in the transformational driver, it is essential to develop an information culture, as an objective to make a substantial contribution to the decision making process (Claver et al., 2001).

Many organizations seek to reduce the burden and layers of administration through reengineering its processes using technology. In this sense, there are several examples of corporations such as Hewlett Packard, Campbell Soup, and IBM, which have reduced the human resource headcount and used more effectively the information. These organizations were able to embrace the notion of value added information to make decisions and automation as means to reengineering its HRM processes (Kovach and Cathcart, 1999). When investigating the reasons for introducing an HRIS, a survey conducted to 33 firms revealed that 79% of them recognised that cost savings or operational reasons were the main driving forces to change. The firms primarily expected that the automation would facilitate the standardization of their HR processes and decrease the number of HR professionals in the organization. Similarly, Torrington et al. (2008) showed that the most popular reasons for introducing an HRIS are: quality improvement (91%), speed (81%) and flexibility of information (59%), reducing the administrative workload of the HR area (83%) and improving services to employees (56%). In the same way, additional research has discovered that the system adoption is highly determined by the HR strategy followed in the specific organization. For example, where the strategy is to reduce cost, a transactional IT system approach resulted on more simple HR administration (Ball, 2001).

The informing functionality of the IS has been widely used by companies in all sectors. The uses of Intranet or Internet portals are means to propagate information to employees and the external world (Haines and Petit, 1997; Kovach and Cathcart, 1999).

Many authors have agreed that the ultimate purpose of the HRIS is strategic. Firstly, due to the quality and value of the information provided to managers and HR staff for decision making purposes; and secondly, to enable HR executives to concentrate on more strategic HR activities such as facilitating organizational transformation, supporting in knowledge management, and facilitating a learning environment (Kovach et al., 2002; Shrivastava and Shaw, 2003). A study conducted by Lawler and Mohrman (2003) discovered a relationship between the use of HRIS and the level to which HR performs a strategic partner role; where HR has a greater probability to become a true business partner in the strategy process, when an integrated HRIS is in place. However, a fully integrated HRIS does not assure that HR will automatically become a strategic partner. On the other hand, the purpose of having an integrated HRIS accessible to the whole organization, as well as to support strategic HR matters, is the increased tendency of devolution of HR practices to the line (Ball, 2001), where the HR area has become more a custodian and controller of such practices, and line managers the executors.

Another important consideration of why big multinationals are grasping the concept of a fully integrated HRIS is as a previous stage for implementing outsourcing or shared services initiatives. It is the case of the multinational oil company Shell, which defined in 2002 to have “increased efficiency and effectiveness of HR systems and processes”, as one of the four global HR priorities. The implementation of a shared services sourcing and delivery model was considered to be the final outcome of this strategy; however, two key activities areas needed to be implemented previously, to assure an effective and successful delivery of the model: first, simplify, standardise and benchmark global people processes, in order to have a common and stable ground for the approximately 100 country operations worldwide; second, leverage and fully embed in the organization the HRIS operation globally.

In practical terms and according to the Chartered Institute of Personnel and Development (CIPD) from the United Kingdom, technology has been used in organizations in five broad HR areas: People development and performance management, resource management (e.g. recruitment, selection, HR planning), employee relations and communications, HR information and accounting, and retention and reward (Torrington et al., 2008). The applications available seek to add value in using the information for decision making rather than a merely source of data collection and storage (Kovach et al., 2002). In that sense, multinationals such as Hewlett Packard, IBM, and Campbell Soup utilize the functionalities of HRIS to improve the coordination of HR initiatives, support cross-national learning programmes, identify talent worldwide, as well as to follow up and manage the quantity and quality of the cross-national workforce (Kovach and Cathcart, 1999).

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### III. KEY CRITERIA TO ASSESS THE EFFECTIVENESS OF AN HRIS.

Organizations are driven by different forces when implementing their IT management systems. From the writers' point of view, qualitative and quantitative parameters are the two major criteria to assess the effectiveness of an HRIS. Furthermore, to support the success of the system, there are two key enablers: organizational suitability and system architecture. On top of that, there are other factors such as availability of resources, HR leadership, organizational maturity, process oriented approach, among others that influence the effectiveness of an HRIS. According to Shrivastava and Shaw (2003), companies are more likely to meet the full potential of technology when IT programmes are undertaken with an orientation to allow the HR area to focus on more value-added initiatives. At the same time, Kovach et al. (2002) highlighted that features such as scalability, set-up, functionality, compatibility, cost, and security deserve consideration when assessing an effective HRIS.

This section will develop and explain the main elements of the qualitative and quantitative parameters, in addition to the two critical enablers.

#### *Qualitative parameters*

Ideally, an assessment of HRIS effectiveness would be through a financial profit analysis or return on investment. However, due to the constraints to measure financially the impact of an IS, other measures of effectiveness are used such as *user satisfaction*, based in attitudes and beliefs, and system usage (Haines and Petit, 1997). In a research developed by the mentioned authors, they found that three items explained 47% of the variance in user satisfaction of the IS: (a) The HRIS is flexible to interact with, (b) the HRIS is useful to perform the employees' job, and (c) the use of the HRIS increases the employees' productivity. Nevertheless, the study showed that a higher rate of user satisfaction does not necessarily correlate to more use of systems.

What's more, when users perceive that the system is easy to learn and *easy to use* are expected to utilize the system more (Fisher and Howell, 2004). Additionally, other studies have found a positive correlation between easy to use and user satisfaction (Haines and Petit, 1997). It has been observed that when new IT systems involve a great deal of mental effort to learn, on top of the employee's daily workload, it creates unintended reactions or generates a negative perception. Fisher and Howell (2001) described an example of a firm who designed an on-line performance appraisal system that required the involvement of several parties at various stages of the process. The complexity of the functionality was perceived as excessively tedious, which generated negative perceptions of the system, and consequently caused a negative impact in the image of the HR function. Therefore, it is critically important to consider how users respond to IS developments when designing such functionalities.

Another important aspect is the perception of *usefulness* of the system, i.e. the quality of the information that it produces and how it increases productivity as well as job's effectiveness. Haines and Petit (1997) found a strong positive correlation of this feature with user satisfaction. To put it more simply, the ability that the system has to transform the input (data) into a valuable and quality output (information), in order to provide management with a robust source to make decisions.

Finally, the degree in which the HRIS reflects *alignment to the organizational strategy* is an important way to measure the effectiveness in qualitative terms. Fisher and Howell (2004) mentioned that people will be more likely to rely on the HR practices of the IS if it reflects the corporate values of the firm, as well as acting as a enabler to achieve the organization's goals.

#### *Quantitative Parameters*

This is probably the most objective way to assess the effectiveness of an HRIS. However, the outcomes of the performance indicators have to be analysed with precaution, as it can be the case

that demanding standards of control in a firm, force people to use a system, which will not necessarily reflect the level of user satisfaction or qualitative features previously described.

The automation of processes and the simplification of HR transactional activities generate an administrative advantage which can be measured as a **reduction in time** of the HR staff to achieve the expected results. Furthermore, the HRIS in the last decade are moving to a further stage: employee self-service. This approach allows employees to have direct and on-line access to their records, which reduces even more the administrative burden of the HR staff (Kovach et al., 2002).

The most significant parameter to measure the success of an HRIS from the organizations perspective, as different surveys have revealed (Kovach and Cathcart, 1999; Torrington et al., 2008), is **cost savings**. Organizations like Merk & Co. estimated a cost reduction of 86% per HR transaction when it is performed by the employee instead of an HR professional. In this organization, after the implementation of the employee self-service functionality, transaction costs were estimated to be \$2.3 when performed by the worker, compared to \$17 when it used to be performed by the HR staff. Additionally, the new system generated unexpected benefits such as data quality, as employees had to enter their own data (Kovach et al., 2002).

Lastly, another preferred way to measure the effectiveness of the system is through **system usage**, overall or per functionality, as it is possible to track down the employees' use of the system. Haines and Petit (1997) found that individual/task characteristics such as age, gender, and education, have some degree of influence on system usage. This metric allows following up the level of compliance from the staff to several HR processes such as time and attendance, competence assessment, and performance appraisal.

### **Organizational suitability**

The organization is a key enabler to ensure the effectiveness of the HRIS. There are a number of requirements and preparations that if attended, will increase the likelihood of success of the system. One of these is the **acceptance of the system** by the organizational culture. Claver et al. (2001) concluded that when the information system is in alignment with the firm's culture, it causes a number of positive consequences such as increasing the level of satisfaction of the employees; given that it facilitates internal integration and environmental adaptation, thus reducing the level of uncertainty and anxiety created by the new IT system. On top of this, corporate members will have a better predisposition towards the IS, given that a system is barely controlled only by formal measures, rather cultural rules. Lastly, it will be considered as a reliable source and mean of communication within and outside the firm.

The **availability of internal user support** is expected to be a key success factor for HRIS effectiveness. A study conducted by Haines and Petit (1997) determined that "the availability of internal support with the presence of a specialized HRIS department or unit had the strongest influence on user satisfaction and system usage" (p. 268). In addition to a specialized IS unit, users who are supported by top management and immediate supervisor for using the system are expected to have a higher level of satisfaction and use the IS more frequently.

In the same way that **employee involvement and participation (EIP)** impacts positively every new initiative that is carried out in a firm, it has an important influence in the development of a new HRIS. EIP has to start in the early stages of the project planning of the HRIS, in order to contribute to a successful implementation (Kovach et al., 2002). This kind of approach will help to ease issues to be experienced later in the implementation stage (Fisher and Howell, 2004). Researchers have also found that there is a positive correlation between EIP in the HRIS development and implementation process, and user satisfaction (Haines and Petit, 1997; Fisher and Howell, 2004). The benefits of EIP contribute to a stronger feeling of ownership, as well as a better fit between user needs and expectations, and system design.

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Lastly, appropriate **training** is a key organizational enabler to use the IS in its full potential. Research has found that there is a positive correlation between training supply and higher levels of satisfaction and use (Haines and Petit, 1997; Fisher and Howell, 2004). Basically, users feel more confidence of using the system when their IT capability is stronger.

### ***System architecture***

Haines and Petit (1997) found in their study that system conditions such as documentation, accessibility, the presence of on-line applications, and the number of human resource management applications were highly significant features of success. The results of their work showed that the design of the IS and its characteristics are related to increased user satisfaction. It has been observed that “in-house” **applications developments** results in a better fit between user needs and expectations, and the system customized to address those needs. Additionally, as technology becomes a part of people’s life, an innovative system is likely to increase user satisfaction (Haines and Petit, 1997; Fisher and Howell, 2004). However, innovation and higher number of user applications must not be confused with complexity, as the latter was associated with lower levels of user satisfaction and likelihood of system failure (Fisher and Howell, 2004).

The other critical factor that HR units have to face when implementing an HRIS is whether it will be an “off-the-shelf” vendor solution, based on best practices, or a customized process driven approach (Shrivastava and Shaw, 2003). The first provides the opportunity to redefine and reassess HR processes, to align them to the best HR practices of the market; as the cited authors pointed: “Applying technology to a bad process often results in a bad process that works faster” (2003, p. 207). Alternatively, the second option has the benefit of not having to deal extensively with the difficulty of changing the way people do things, in other words, to deal with the resistance to change. As a matter of fact, there is a consensus that changing HR processes should be driven by business strategy, rather than technological reasons (Shrivastava and Shaw, 2003). Therefore, organizational priorities and drivers must be taken into consideration before choosing the most suitable option.

## **IV. ISSUES AND CHALLENGES FOR ORGANIZATIONS**

Usually, the challenges that organizations have to cope with when implementing an HRIS are not only in the planning and implementation stage, also after the system is in place. These challenges are related with meeting employees’ expectations, loss of personal interaction between HR and the people of the organization, the development of an informational culture, and to elaborate an effective change management approach.

One of the major challenges that HR and organizations face when implementing HRIS solutions is to meet the promises made to users of the multiple advantages of the system. People expectations are high, when they are told that their lives will change due to an increased productivity and efficiency, better use and sharing of information, more effective distribution of work tasks, improved service, among others. However, there are estimations “that nearly half of all new technology implemented in organizations fails” (Fisher and Howell, 2004, p. 243). Unfortunately, such situations bring negative consequences to organizations from the HR point of view, as future change initiatives will lose credibility in the organization. Therefore, to avoid harming the organization, it is better to commit to what can “really” be delivered, and once committed, make sure to “deliver the promise”.

Another major concern of implementing an integrated HRIS is the loss of “personal touch” in the interaction with employees of HR related matters. In the writers’ opinion, is undoubtedly that the trade off to automation and employee self-service portals brings the depersonalization of transactions that used to be managed more directly between two or more parties. Nevertheless, personal touch continues to be important in today’s organizations, as it is one of the most effective ways to build trust

and consequently lead people. For that reason, HR needs to find other ways to compensate this gap, by continue adding “personal” value to the organization not anymore as an operational expert, now as a truly business partner and change agent.

Many scholars agree that in most organizations the potential of the HRIS is not fully utilized. Moreover, in many cases firms achieve automation of existing HR processes, but fail to progress to a more advanced stage of an informing culture (Torrington et al., 2008). Claver et al. (2001) identified two organizational positions towards IT: a first, more simple, where IT is important to a firm and it is used to improve operational effectiveness (informatic culture); a second, more sophisticated, which visualizes IT as a foundational enabler to make correct decisions through an HRIS (informational culture). To clarify the theory, let's use a generalization as an example: Western corporations design the IS as effectively as possible from a technical perspective, and then, employees are persuaded or “forced” to get used to it (informatic culture); conversely, Japanese firms design the IS to benefit and profit from the knowledge that employees already have (informational culture). The latter approach has the advantage of a more meaningful and useful HRIS that has relevant information for decision making process and is accepted and valued by the organizational culture.

Most probably, to put in place an effective change management approach to a new IS development, is one of the most challenging processes that HR has to cope with. It is known that cultural change needs plenty of time for the new shared beliefs to be fully embedded in the organization; unfortunately, organizations implement their IS in a short period of time (Claver et al., 2001). In addition to cultural change, new technology means a significant change in the organization that can impact greatly the way that the work is done, job roles, and performance (Fisher and Howell, 2004). These are the reasons of why organizations must start as early as possible preparing the change management process, where positive reactions can be facilitated, as well as to eliminate the blockers and minimize the negative reactions. A winning approach to achieve user acceptance would be to engage staff by communicating “honestly” how easy to use and how supportive to get their jobs done will be the new IS; however, do not forget to meet employees' expectations. On the other hand, as the level of people's IT competence differs, the approach to “sell in” the system must vary depending on the likelihood to resist that the target population has towards the new technology. Similarly, management must be treated with special consideration, as there is agreement among scholars that many IT projects fail, due to the inability of managers to manage change (Shrivastava and Shaw, 2003); especially if HR needs the support of managers to act as change agents. To summarize, the literature identifies a number of enablers that will increase the likelihood of a successful IT implementation such as extensive, honest and early communication, aim quick wins, fragment the system into partial deliverables, use trusted employees as change champions, run pilot tests to iterate improvements, and ensure proper employee involvement and participation since the beginning.

## V. CONCLUSIONS

The introduction of an information system into an organization is not an easy endeavour, given that a great deal of technical and behavioural factors must be taken into consideration to assure a successful implementation. This paper has intended to clarify the purpose of an HRIS to an organization, in addition to discuss about the key criteria to assess the effectiveness of the system.

Organizations are influenced by different driving forces to implement an HRIS: operational, rational and transformational; being cost savings or operational drivers the main reasons for introducing an HRIS. Alternatively, HR aims to become a strategic partner to the organization by developing advanced HRIS; however, an information system is a contributor to reduce transactional cost and the size of HR, not necessarily a guarantor of strategic partnership (Lawler and Mohrman, 2003).

When assessing the effectiveness of an HRIS, qualitative and quantitative parameters are the two

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major criteria to measure. The main elements of the qualitative dimension are user satisfaction, which reflect attitudes and beliefs to the IS; easy to use and usefulness, which are positively correlated to user satisfaction; and alignment of the IS to the organizational strategy. On the other hand, the main factors within the qualitative dimension are reduction in time of HR administrative processes, cost savings and system usage. Additionally, there are two key enablers that support the success of the system. The first is organizational suitability, i.e. the users' acceptance of the system, the existence of internal user support, active employee involvement and participation, and appropriate training. The second facilitator is system architecture, i.e. the approach taken to develop or acquire the most suitable HRIS to the organization.

Organizations face several challenges to make of an HRIS a key enabler, in order to become a high performance organization. One of the challenges is how to progress from an "informatic" to an "informing" culture, which would increase the likelihood to improve the quality of information and use it as a competitive advantage to make better decisions and to achieve organizational goals. Another challenge is how to manage a reliable and effective change process, to overcome the natural resistance to change that individuals and organizations show to the "threats" of new technology. In this matter, act promptly, seek the appropriate leadership champions, deliver the promise, and work on maximizing the qualitative and quantitative parameters, as well as the key enablers mentioned previously, are a constructive way to achieve HR excellence in information systems.

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