Shu-Te University
College of Informatics
Graduate School of Information Management

Masters Thesis

A Study on the Selection of a Human Resource Management System for the Vietnam Institute of Science and Technology

Student: Ho Minh Kiem
Advisor: Dr. Teresa L. Ju
Dr. Nguyen Thi My Loc

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ABSTRACT

The purpose of this research paper is to investigate the importance of human resources (HR) aspects in organizations, the benefits of HRM system provides to organizations, and how to select a HRM system for an organization. Specifically, the objective of this study is to understand the strength and weakness of Human resource management (HRM) in the Institute of Science and Technology the Human resource management system in order to design a project of selecting a HRM system to this organization. The study not only provides an overview of HRM and its importance for organization to gain their competitiveness, but also provides detailed criteria for selecting an HRM system. The study can give suggestion to not only the Institute of Science Technology but also other organizations to choose a suitable HRM system.

Keywords: Human Resource Management Systems, System Selection Criteria, System Selection Procedures, HRM, Institute of Science and Technology.
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Chapter 1 Introduction

We are living in an era of changes where the highly competitive market always requires for quick and effective responds. It is expected that the rate of change will increase much faster in the near future along with the development of new technologies. Therefore, companies need either to adapt to the changes or to change their processes and innovate as the market requires, in order to being highly competitive in the new market. Managers realized that the success of a business enterprise in a complex and changing environment depends on the efficient management of its Human Resources (Greising-pophal, 2008).

“The competitive reality is that organizations will have to develop capabilities that will better serve their customers while differentiating the organization from its competitors” (Ulrich, 1997). Therefore, the maintenance and development of human capital is necessary to sustain an organization’s competitive position. In other words, the organization needs to have a human capital mix (e.g., knowledge, skills, and abilities) that will facilitate goal achievement year after year. Organizations that fail to take a proactive approach to developing and maintaining human capital will be less competitive.

Human Resources is a fundamental part of the structure of every successful organization, therefore, the information received in this area needs be continuously followed-up and correctly evaluated to have effective decision making. However, due to the large amount of information from many activities of the organization is handled in this area; managing the information in this area is becoming more difficult. Information
stored in paper & files did not provide the holistic view to objectively evaluate the most important assets of the knowledge of an organization, its human resources management information. Moreover, the information technology, recently, has started playing an important role in storing and using information in every aspect of an organization (Grensing-pophal, 2008). Hence an information system is required to effectively communicate and work within the the organizational human resources management (HRM) information system.

Human resource information systems (HRIS) have played an important role in the day-to-day functions of HRM and payroll managers. However, in a world of information technology, there is always news software born to suit with any requirements of any organizations. The problem is how to select the best system for the organization’s need. With so many flexible HRIS options available, perhaps this is the time to consider organization’s needs, and to get one step ahead. Since, something that was adequate 10 years ago may not be adequate now. So, company must figure out what are the problems with the current operation activities, especially with the HRM functions (hcamag.com, 2001). Buying a new human resources management system is both a daunting and risky proposition. Without a thorough understanding of the trend of the market and how the system best meets the needs of the organization, costly failures can ensue.

Consequently, many organizations decide to use consultants to help choose an HRMS. The challenge is picking the right consultant for the job. This obviously slows down the decision making of HR practitioners in reaching higher levels of strategic involvement in setting and achieving the organization goals. In addition, it was
considered that: 52% of organizations surveyed do not even have an HRMS; Of the 52 per cent or organizations that do not have an HRMS, about one-fourth indicated that they intend to purchase a system, although they don't know yet what package they will buy. And more than 90% of all systems currently operating have been implemented within the past 10 years. However, mating organization needs with the right system features can be very tricky, as a result, some organizations decided to replace systems only recently implemented. Moreover, system implementations can be extremely taxing, demanding maximum resourcefulness on the part of project leaders in dealing with budgets, existing institutional structures, internal turf disputes and external vendor relations. Estimates of cost vary from $5,000 to $10 million (George Pearson, 2001).

For an institute of science and technology, human resources management is always as important as the others. Institute of science and technology is the place people could do research and apply modern technology, and technological infrastructure to create or innovate. The Institute of Science – Technology can be difficult to survive long term and building up the benefits competitiveness without people, the talented and professional engineers. It can be said that the people make the differentiations in the Institute of Science (IST) - Technology. Therefore, the HRM system in the IST is really important. However, if only pay attention to human resource development without linking it with the principles and objectives of the Institute of Science - Technology in any attempt to promote the effective operation of the workers will return useless.

In this study, we would like to understand the Human resource management and the HRM system in order to find out the criteria to select a good system for an organization, specifically the Institute of Science and Technology of Vietnam.
In this study we use exploratory research. Exploratory research is a type of research conducted because a problem has not been clearly defined. Exploratory research helps to determine the best research design, data collection method and selection of subjects.

Exploratory research often relies on secondary research such as reviewing available literature and data, in some case, the qualitative approaches such as informal discussions with consumers, employees, management or competitors, and more formal approaches through in-depth interviews, focus groups, projective methods, case studies or pilot studies.

The Internet allows for research methods that are more interactive in nature, for example, RSS feeds efficiently supply researchers with updated information; major search engine search results may be sent by email to researchers by services, such as Google Alert. Comprehensive search results are tracked over long periods of time by services; and Web sites may be created to attract worldwide feedback on any subject.

The results of exploratory research are not usually useful for decision-making by themselves, but they could provide significant deep understand into a given situation. Although the results of exploratory research can give some indication as to the "why", "how" and "when" something occurs, it cannot tell us "how often" or "how many."

In this study we first of all try to gather the literature review to find out the criteria of selection of a Human Resource Management System. The overview of the Institute of Science and Technology of Vietnam is combined with the system analysis of a HRM system to suggest a suitable system for the Institute.
Table 1. The research process

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<th>Contents</th>
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<td>Identify the research problem</td>
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<td>The challenging in selecting a software</td>
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<td>The statistic an the failure reasons</td>
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<td>Literature review</td>
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<td>Analysis and results</td>
<td>Analyze the IST requirement and goals</td>
</tr>
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<td>Propose the HRM system for the IST</td>
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<td></td>
<td>The contribution of the study</td>
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Chapter 2 Literature review

2.1. Human Resource Management

From the late 1970s to the early 1980s, a movement occurred along with corporations’ personnel departments were renamed “human resources” departments. This movement acknowledged that employees are not only just parts plugged into positions, but they are important assets. It also marked an emerging recognition that organizations should change or stop the historical practice of considering employees as costs, rather than as vital sources of revenues and profits (Liu et al., 2007).

The term Human resources is defined as the available talents and energies of people who are working to an organization as potential contributors to the creation and realization of mission, vision, strategy, and goals of the organization. They can make the best use of all types of resources within the organization. “Finance and technology can bring advantage but are no longer capable of sustaining this advantage.” If the human resources are well functioning, employee productivity rises and customer service improves. The employee productivity rise but with lower cost, meanwhile, the customer service improves which raise the perceived value. Thus, human resources could enable the company to create more value (Hill and Jones, 2004). This is the result why it is vital to manage and develop human resources effectively in any organization (Priti, 2004).

Human Resource Management (HRM) is the function within an organization that focuses on the activities of recruitment, management, and providing direction for the people who work in the organization. Human Resource Management could absolutely
also be performed by line managers by dealing with issues related to people, for instance, compensation, hiring, performance management, organization development, safety, wellness, benefits, employee motivation, communication, administration, and training. According to Werner & DeSimone (2006), HRM can be defined as the effective selection and utilization of employees to achieve the goals and strategies of the organization, and also the goals and needs of employees.

In recent years, the work on the relationships between human resource management and organizational performance has been added as supplement by researches, which show that human resource management is also positively linked to the motivation and wellbeing of workers in organizations. Researches also show that the development of positive psychological contracts between workers and managers in organizations are strongly affected by the workers’ approval of the human resource management practices and the use of human resource management. Form exploiting workers, the use of HRM creates high levels of job satisfaction and motivation amongst workers. In addition, HRM also helps to explain the mechanism for the positive relationship between human resource management and organizational performance documented.

Four key areas of HRM under transformation: recruiting competencies, retaining competencies, reinforcing competencies, and replacing competencies. Recruiting competencies patterns have changed from mass recruitment of new graduates to recruitment on demand, and from generalist orientation to specialists with general creativity. Reinforcing competencies de-emphasize seniority while increasing the importance of performance and ability. Retaining competencies use training and
development mechanism to upgrade skills and retain capable employees while adopting new job design to divide core employees from poor performers and contingent workers in order to retain core HR competencies. Finally, replacing competencies introduce employment flexibility and outplacement to replace lifetime employment.

Human resources as a unique asset that can provide sustained competitive advantage for organizations. Importance of managing human resources has been confirm in the changes in the business environment with increasing globalization, changing demographics of the workforce, increased focus on profitability through growth, technological changes, intellectual capital and the never-ending changes that organizations are undergoing (Sandeep Krishnan & Manjari Singh, 2006).

Dowling and Schuler (1990) developed a model which refers to the type of personnel policy which is appropriate to encourage behaviors necessary to achieve the objectives in the strategic competition. According to Dowling and Schuler, strategic competition is divided into three categories: strategy to strengthen the quality, cost reduction strategies, and creative strategies.
Table 2. Summary of strategic competition categories

<table>
<thead>
<tr>
<th>Creative strategies and activities of HRM</th>
<th>Strategies to strengthen the quality and activities of HRM</th>
<th>Strategy and cost reduction activities and HRM</th>
</tr>
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<tbody>
<tr>
<td>- For the active participation of workers</td>
<td>- For the active participation of workers</td>
<td>- For less participation by workers</td>
</tr>
<tr>
<td>- Analyze career shoal</td>
<td>- Analyze career shoal</td>
<td>- Analyze career depth</td>
</tr>
<tr>
<td>- Mobilizing external resources</td>
<td>- Mobilizing the resources outside</td>
<td>- The use of resources within</td>
</tr>
<tr>
<td>- Many opportunities for career development</td>
<td>- Less opportunity to develop career</td>
<td>- Less opportunity to develop career</td>
</tr>
<tr>
<td>- Apply the criteria of the process and results</td>
<td>- Apply the criteria on the results</td>
<td>- Apply the criteria of the process and results</td>
</tr>
<tr>
<td>- Apply the long-term criteria</td>
<td>- Apply the criteria short term is mainly</td>
<td>- Apply the criteria short term is mainly</td>
</tr>
<tr>
<td>- Apply the criteria of the object in the same group</td>
<td>- Apply the criteria of the object in the same group</td>
<td>- Apply criteria used is the individual</td>
</tr>
<tr>
<td>- Apply a policy of insurance laws</td>
<td>- Apply the criteria used is the individual</td>
<td>- Limitations apply the policy of insurance laos</td>
</tr>
<tr>
<td>- Apply various preferential policies</td>
<td>- Apply some preferential policies</td>
<td>- Less preferential policies</td>
</tr>
<tr>
<td>- Wages averaged</td>
<td>- Wages averaged</td>
<td>- Salary levels by</td>
</tr>
<tr>
<td>- Training more</td>
<td>- Training more</td>
<td>- Training less</td>
</tr>
<tr>
<td>Building relationships between managers and employees</td>
<td>- Building relationships between managers and employees</td>
<td>- Construction of the relationship managers</td>
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<tr>
<td></td>
<td></td>
<td>- The traditional labor</td>
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</table>
2.2. Human Resource Management System

The relationship between Information technology and HRM is that Technology help employees to gain completely control over their training and benefits enrolments; Technology help to give birth to a paperless employment office; Technology streamlines the HR department’s work; and technology provides knowledge-based for decision support etc (Cieri et al., 2005). The human resources in any organization are the most valuable asset. The Human Resources (HR) department of any organization administers these resources through the Human Resources System. The system is software enabled so that all HR processes can be efficiently operated (Human Resources System, 2008).

There are some Software applications for HRM, such as, HR planning applications, staffing applications, performance management applications, learning and career development applications, compensation and benefits applications. Increasingly, organizations depend on more sophisticated Human resource information system (HRIS) in order to support human resource activities. The key reasons for such a development are the increasing globalization of business, the development of more flexible, non-traditional organization structures, the development of information technology (Cieri et al., 2005).

A Human Resource Management System (HRMS, EHRMS), Human Resource Information System (HRIS), HR Technology or HR modules, refers to the systems and processes at the intersection between human resource management (HRM) and information technology. It combines HRM as a discipline and in particular its basic HR activities and processes with the information technology field, whereas the programming of data processing systems gradually changed into standardized routines.
and packages of enterprise resource planning (ERP) software. Generally, these ERP systems have their origins on software that integrates information from different applications into one universal database. The relationship of the financial and human resource modules within one database is the most important distinction to the individually and proprietarily developed predecessors, which makes this software application rigid and flexible (Wikipedia, 2008).

The modern HRIS is different from older systems that these systems were designed not only just the compensation and benefits department to meet the needs of the entire HR function. New technology in database systems could make information be generated by the HR function about each employee, applicant, or position to be tracked, and more importantly, integrated with other data for decision-making purposes (Michael Bedell, 2008). An HR system includes processes of the selection of employees through raising vacancy adverts, calling for resumes, and facilitating interviews to finalize the hiring of employees with good qualification. It also includes the process of identifying training needs and scheduling of optimum training of employees by letting them joining into conferences and seminars. Remuneration to employees is also an important aspect that HR administers through the Payroll module of the HR system. An HR system is an union of HR management and HR information systems. HR technology through use of HR modules is used to achieve this union. The use of a single database is the hallmark of a successful HR system application package (Human Resources System, 2008; Duff, 1989).

An organization might have to face with some issues relevant to Human Resource, in terms of recruiting, retention, and cost control of benefits, such as: (1) difficulty of
recruiting talented sales staff while turnover among them is every high; (2) difficulty of making queries to the HR files to identify good candidates for job opening within the firm; (3) the need of having more administrative staff to maintain and update employee and job salary history data while the paperwork supporting for HR function seems grow day by day; (4) the need of better data on the most relevant compensation packages for certain hard-to-find job description; (5) the need for better information system to assess the costs and benefits of products, early retirement plan or educational program reimbursements (Summer, 2005). These kinds of problem may affect the quality and responsiveness of the HR function. Most of those are the lack of access to information about employees, skill sets, job descriptions, turnover data, retention data, and benefits plan which can enable managers to make queries and generate reports for external agencies (Ashbaugh & Rowen, 2002).

Beyond maintaining databases on employees, positions, skills, applications and performance, a HR information system provides information that supports the organization to manage workforce characteristics. The objective of an effective HR strategy is to acquire, place, train, and develop employees to meet organizational needs. HR information systems support managerial decision-making needs by offering query and reporting tools (Ashbaugh and Rowen, 2002). HRIS also offer simplification in processes such as performance appraisals. The software tracks core-competencies and provides the manager with tips for employees who need improvement or coach. It can also alert the supervisor to orients within the department that may indicate a need for training or management attention to serve the organization’s goals. These appraisal systems also help companies with numerous locations to manage consistently across
operations (Lori Bussler & Elaine Davis, 2002).

Normally packaged as a database, some form of HRIS and every HRIS has different capabilities was bought by many companies. Pick HRIS carefully based on the capabilities of the company.

Table 3. The HRIS software’s capabilities

<table>
<thead>
<tr>
<th>Functions provision of HRIS</th>
<th>HRIS serve tracks in the organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of all employee information.</td>
<td>Attendance and PTO use,</td>
</tr>
<tr>
<td>Reporting and analysis of employee information.</td>
<td>Pay raises and history,</td>
</tr>
<tr>
<td>Company-related documents such as employee handbooks, emergency</td>
<td>Pay grades and positions held,</td>
</tr>
<tr>
<td>evacuation procedures, and safety guidelines.</td>
<td>Performance development plans,</td>
</tr>
<tr>
<td>Benefits administration including enrollment, status changes,</td>
<td>Training received,</td>
</tr>
<tr>
<td>and personal information updating.</td>
<td>Disciplinary action received,</td>
</tr>
<tr>
<td>Complete integration with payroll and other company financial</td>
<td>Personal employee information, and</td>
</tr>
<tr>
<td>software and accounting systems.</td>
<td>occasionally,</td>
</tr>
<tr>
<td>Applicant and resume management</td>
<td>Management and key employee succession plans,</td>
</tr>
<tr>
<td></td>
<td>High potential employee identification, and</td>
</tr>
<tr>
<td></td>
<td>Applicant tracking, interviewing, and selection</td>
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</tbody>
</table>
2.3. Benefits of HRM system to company

In Sandeep Krishnan & Manjari Singh research, the concept from Miles and Snow (1984) was implied that strategy Human Resource Management is when HRM systems help in the formulation and implementation of business strategies. The common benefits of HRIS frequently cited in studies included improving accuracy, the provision of timely and quick access to information, and the saving of costs (Lederer, 1984; Tetz, 1973; Wille and Hammond, 1981). Ulrich (1997) suggests that the HR function may be ideally placed to help an organization to manage challenges. In addition, Kovach et al. (2002) list several administrative and strategic advantages to using HRIS. Similarly, Beckers and Bsat (2002) indicate that, at least, five reasons why companies should apply HRIS. These reasons were that because HRIS can (1) increase competitiveness by improving HR operations; (2) produce a greater number and variety of HR-related reports; (3) shift the focus of HR from the processing of transactions to strategic HRM; (4) make employees part of HRIS; (5) and reengineer the entire HR function of companies. Targowski & Deshpande (2001) also support that companies should use HRIS, because HRS can give a lot of benefits, such as: incremental leaps in efficiency and response time of various traditionally labor intensive human resource activities, better knowledge management, and the ability of calculating various business performance calculations.

- Incremental leaps in efficiency and response time of various traditionally labor intensive human resource activities, it is not only work duplication eliminated, but also various processes are streamlined and become more efficiency. HR staff can spend less time on day-to-day administrative issues, and spend more time on strategic decision making and planning. The
organizations could have more chance to develop and cut cost. This has a direct impact on productivity and profitability of an organization.

- Better knowledge management which leads to a firm’s better competitive advantage in the marketplace and better stakeholders’ satisfaction

- Using the HRIS to calculate various business performance calculations like return on training, turnover costs, and human-value added. These calculations can be used to impress the top management that the human resource function is an equal strategic partner and is critical to meeting various organizational objectifies.

Broderick and Boudreau (1992) examined how HRIS can contribute to cost reductions, quality, customer satisfaction, and innovation. Sadri and Chatterjee (2003) stated that when the HRM function was computerized, then the faster decision making can be carried out on the development, planning, and administration of HR because data can be much easier to store, update, classify, and analyze. In addition, they added a note that HRIS can strengthen an organization's character (Ngai, 2006). The ways that human resource information systems use to cut costs are streamlining payroll, benefits enrollment, scheduling and other administrative tasks. HRIS also boosts efficiency by eliminating paper-based manual processes and work redundancies. And the benefits will not stop at the HR department. Managers empowered with real-time financial and acuity data, can ensure that the right number of employees with the right skills are on the job and can head off potential budget overruns (Lee, 2006). On the management side, the software provides detailed, up-to-date employee information. It tracks whether employees are current with required qualifications. It also tracks work and salary history,
evaluations and whether any warnings have been issued to the employee. Managers also could run quick queries, such as average rate of pay for employees, number of hours worked by outsourcing staff, turnover and absences, and reports when they need more customized data, such as the distribution of employees participating in the field.

Colleen Bornhorst, senior systems analyst says: “It makes their job easier because they don't have to rely on HR.” Prior to implementation of the system, when a manager needed information, he or she would call human resources to request the data. HR would print the data and manually deliver it to the manager or send it through interoffice mail. "By the time the report made its way to the manager, it would be two weeks old sometimes," says Bornhorst. Employees can use the self-serve system to view their work record and salary history and to update their personal information. It also shows if they are up-to-date on their immunizations and training and licensing requirements. The training component allows employees to review and to sign up for programs, and to update their files so that management board knows that a requirement has been met. (Lee, 2006)

Businesses are usually got well-prepared to undertake changes provided once they see a competitive advantage to doing so. However, many companies have problems when they implement new technologies, including HRIS, due to the lack of sufficient capitals and skills. For this reason, companies are unwilling to implement HRIS unless they are convinced of the specific benefits that the software would bring to their organizations.
2.4. Current trend of HRM software

The continued growth of web, both intranet and internet, enabled HR software and systems, including: Web based e HR software, Non-web HR software trends, and HR software market trends.

*Web based e HR software* with a browser ‘front end’, employee Self Service (ESS) to view personal data, training requirements, change benefits, request holidays or leave, access to selected personnel information via employee portals, PC’s, kiosks, manager. Self Service (MSS) includes tools to help managers with recruitment, performance measurement, compensation planning, automation of routine HR administration, e-recruitment - automated tools streamlining the recruitment process, retaining good employees and utilizing the existing skills within the organization, e-learning, web interfaces, for example, from time and attendance, absence planning, workflow functionality, for instance, automated leave requests, recruitment, improving reporting, analytics and business intelligence, for example, the ability to upload and download HR information, analyze workforce data, investigate trends.

*Non-web HR software trends* - continued growth of: integration of HR software with Payroll software, integration with other HR associated modules, for example, Recruitment, Time and Attendance or Workforce Management, Absence Management, Talent Management, Training, ERP, scalability. HR software that was available for larger organizations, being redesigned to be suitable for SME businesses. And HR software that was suitable for SME businesses increasing in its functionality to be suitable for larger size organizations, globalization with HR software capable of supporting employees in different countries, return on Investment (ROI) being
calculated within organizations to assist justifying investments in new HR software, reducing HR costs by extending the use of technology, such as: e-recruitment, e-learning, the strategic role for the HR department, as it divests itself of routine HR administrative tasks.

**HR software market trends** - continued growth of organizations looking at HR outsourcing, but currently not proceeding, and remaining in-house. Businesses extend their HR software functionality by adding modules, migration to web based HR software, and web enabling activities and processes. Organizations is looking at more economical HR software systems to avoid the implementation costs of larger international HR software, competition, especially in the mid-range HR software market, HR software market or vendor consolidation.
Chapter 3 Selection Criteria of Human Resource Management system

Once it the organization needs a new system, and after taking an inventory of technical expertise in-house, it was clear they needed an outside consultant to help with the selection process (Rodri´guez & Venturast, 2003). After doing some researches and interviews, the top concern was finding consultants who did not come into the process with any biases toward one system or another. Of course, there will be some incompatibilities in all software with the organization. However, there will be one of them be most suitable to select when the facts of price, industry, country, after sale service of the vendor, upgrade capabilities, user-friendliness and similar factors are considered (Basoglu et al., 2007)

3.1 . HRM System requirement analysis

In this part, the HR managers need to sit down and discussed with HR staff about the organization’s needs and requirement activities of HRM. The discussion will include these issues:

- Analyzing the organization’s situation: number of staff, annual revenue, HR’s needs for a new system.
- Review of the current operations of HR. Both weakness and strength must be analyzed in order to access and improve the strength as well as adjust the weakness for the better systems.
- Financial analysis of the costs and benefits including a budget.
- Stakeholder analysis, including users, and support personnel for the project.
Project charter including costs, tasks, deliverables, and schedule.

System analysis is the most important in this part which decide the selection of the system, the manager and HR specialist will analyze the system’s needs and then discuss with vendors to find the suitable systems for their needs. First of all, the company needs to know what market-type system they want, which means organization would buys system acquirement, the necessary skills on the open market or a internal developed system (Miles & Snow, 1984). Going through the selecting process, any department personnel frequently request for data-training, IT or internal audit would be involved. HR manager and finance officers should join into the process, as well as HR assistants, bookkeepers or any personnel who will actually be using the system. (Grensing-pophal, 2008).

3.2. HRM Make a selection criteria table

After analysis the system and the organization needs, organization will rely on some criteria to select a good system. From literature review we present here the selection criteria for a good HRM system.

A good HRM system will need to satisfy all requirements below:

- Allow HR staff to get information about any activities that the HR department needs to track and analyze about employees, former employees, and applicants. Data which is necessary for employee management, knowledge development, career growth and development, and equal treatment is assisted. For many packages, employee data is organized around a central screen containing information that provides an overview of the employee. Numerous sub-screens can be accessed from the central employee details screen, which contain
additional information on the employee. A variety of reports is available with user-defined selection, sorting and filtering capabilities as well.

- Allow HRM staff to do benefits updates and address changes, thus freeing HRM staff for more strategic functions. Managers can access the information they need to aim to legally, ethically, and effectively support the success of their reporting employees (About.com, 2008).

- Modify policies and practices have a market orientation, which shows clearly itself in the following characteristics. (1) Employees are hired to meet specific organizational needs at whatever level in the hierarchy they exist; (2) Rewards are based on performance; (3) Reflecting output obtained by employees rather than position or organization and placing special emphasis on external equity (Ouchi, 1980). Moreover, the organization dismisses employees as labor demand varies (Miles and Snow, 1984). On the other hand, the compensation policies pay attention on internal consistency rather than external equity. Performance measures also have an internal focus, which implies that behavior and processes are more importance than the worker’s performance level.

- The system would work best for payroll process: since every business has unique needs so to find a perfect Human Resource & Payroll Software can be difficult. Since in the market, there is not many packages provide with full Payroll. The requirement of an effective and comprehensive HRM system could automatically compute PAYE & PRSI; Holiday Pay & Entitlement; Leave, Sick, and Personal Time; Disability, and much more.
Ease of use (Morton E. & Margaret, 1988): the whole organization needs to take part in defining how it operates currently and how it could flexibly change with a new system. (Brown, 2006); so that it should be easy for anyone to use, no matter if they are trained or not.

Purchase price whether it is within the budget. Many issues have to be considered are Multi-product discounts, limited user’s license, upgraded servers and workstations, annual software maintenance fees, project team training costs and consultation fees (Targowski & Deshpande, 2001).

Database security: HRM systems can provide with its efforts to protect the privacy and security of employee information. It is said that "HRIT is about accessibility, but privacy should be limited access on a need-to-know basis. How can the HR organization handle this?" (HR Focus, 2006)

Comprehensiveness or number of personnel function facilitated such as training and development can be tracked, planned and scheduled for in-house and external training courses. Some activities such as, log an employee's progress with the company, make notes of further training requirement, complete training plans and histories are kept for each employee. Specifically, future training requirements, such as professional re-certification, can be scheduled as part of each employee's educational profile.

Ability to modify components of existing system
- Availability of technical consultation during and after the implementation provided by vendors.
- Ease of understanding documentation
- Ease of interface with other systems
- The HRMS should also have the ability to support various HR and compliance-related reporting needs, including Equal Employment Opportunity (EEO), Military/Veterans (VETS), Occupational Safety and Health Administration (OSHA), Consolidated Omnibus Budget Reconciliation Act (COBRA), and Wages and Filings (W-2 and 1099) (Shafiq Lokhandwala, 2008)
- Tight integration and import/export to reduce redundancies and improve accuracy. It’s capability of easily exporting HR-related data to other software utilities such as Word, Excel, etc.

According to Targowski & Deshpande (2001), when we choose vendor, in addition to those criteria, there are some final ranking of vendor should be based on factors like: functionality of software, technical infrastructure required, platform compatibility, and how the software meets various needs of the firm. Discussing about vendor, Paul D. Hamerman suggest a ranking of HR system vendor as describe in figure 2.
Figure 1. Evaluate Vendors: Product Information and Selection criteria


However, Arnold, Robert A. (1990) indicate that no vendor system will meet all of your requirements and for this reason, therefore, it is necessary to complete the following exercises to determine how closely each system can meet the requirements.

- Identify all requirements not currently met
- Of those currently not met, identify those which the vendor plans to meet and their planned date of delivery
- Of those not met, identify those for which there are no current plans
• Of those for which there are no current plan, identify those which your organization requires
• For those unplanned but required enhancements, determine the vendor’s commitment to provide them, their cost, and their delivery dates.
Chapter 4 Institute of Science and Technology of Vietnam

4.1. Institute of Science and Technology

The Institute of Science and Technology (IST), a Governmental agency, was established in 1975. According to Decree No. 24/CP, dated 22/5/1993, of the Government, Science Institute of Vietnam, held the center of natural science and technology countries. In 2004, the Government issued Decree No. 27/2004/ND-CP of the functions, responsibilities, powers and organizational structure of the Institute for Science and Technology of Vietnam. Under this Decree, Center for Natural Science and Technology national renamed as “Institute of Science and Technology of Vietnam.”

Institute of Science and Technology of Vietnam focus on natural sciences and technology development under the direction of the state. It takes the responsibility for studying on issues of science as the basis for the development of the new technology, and implementation of modern technology for the industrialization, modernization of the state. The team of scientists of the Institute covered many areas, will regularly take high training, and developing the system at some large universities inside and outside the country. Scientists of the Institute have contributed to in the implementation of the scientific research and the deployment of technology, transfer of research results to production and social life.

Besides tasks for scientific research and implementation of technology, Institute of Science and Technology of Vietnam always concerns about the training of the
university to constantly strengthen and improve the quality of staff of scientific research, especially in scientific fields.

4.2. Human resource management in the Institute of Science and Technology

Human resources department has a total staff in the staff is more than 2400 people, more than 700 officers of the long term. Most of the 18 Institute research specialists, Information Center - Documents, museums of natural Vietnam, Publisher of Natural Science and Technology, 06 of 05 bases, and The Institute have an entity.

Institute of Science and Technology of Vietnam has three main parts: the administration, the council and the research and enterprise. The HRM department in administration part plays an important role in managing those 3 parts since most of them are talented scientists. It has made good political tasks that contribute an important part in the renovation of the country.
Below is the organization structure of the Institute:

**ORGANIZATION CHART OF THE NCST**

![Organization Chart of Vietnam Institute of Science and Technology](image)

Figure 2. The Organization Chart of Vietnam Institute of Science and Technology

On the other hand, the majority of scientists of the Institute for Science and Technology of Vietnam come from the working class, farmers, and intellectual class. Therefore, the information transforming within the institute is more complicated. Even though there is many staff in many locations needs to be handling, most of the activities
are doing by hand and paper works, which cause delay in time and working effectiveness. So, it makes the HRM staff very tired in recruiting, developing training courses, evaluating and payroll. For many years, the employees’ profiles, payroll receipts and other documents are mainly kept by papers. Whenever HRM staff needs to trace anyone’s paper, it takes him or her at least half an hour to find. Sometimes, they are slow in respond to employees needs and motivate them to contribute much more to the organization.

There are many drawbacks of HRM which caused by many reasons. One of the main reason is the absence of strategic planning of human resources is the most important thing. Moreover, because of using paper works, for many years, the institute have not practiced the evaluation. It means there is absence of posts description and evaluation system, weakness of public management evaluation system, and absence of evaluation mechanisms based on diagnosis and audit techniques.

It is said that, Good human resource management (HRM) is essential to retaining staff and maintaining a high overall level of performance within a health organization. Effective HRM is one of the key building blocks of a comprehensive HRH strategy. A responsive human resource management system can help ensure that staff knows what they are supposed to do, get timely feedback; feel valued and respected, and have opportunities to learn and grow on the job. Unfortunately, politicized human resource management systems and lack of human resource managers are two common barriers to effective HRM (SMH, 2009).
Kovach & Cathcart Jr (1999) had a suggestion, in order to improve HRM activities such as retaining staff, effective use of limited resources, and providing training for employees in the organization, the HRM department needs to:

- Designate a senior manager to be in charge of HRM
- Provide training to HRM staff
- Develop on-the-job, skill-based training for health care staff
- Streamline the planning, recruitment and hiring process
- Strengthen supervision
- Consider redefining scopes of practice for health care staff
- Track employee data such as attrition, staff turnover, absenteeism
- Develop and enforce HIV antidiscrimination policies
- Address inequities in staff workload, salaries, allowances
- Extend benefits program

Those activities raise a need for HR department, a need to have a HRM system to handle jobs more effectively. Examples of private sector companies that have been successful in utilizing HRIS to reduce their human resource staffs and to more effectively utilize the information are Hewlett Packard, Campbell Soup, and IBM (Kovach & Cathcart Jr, 1999).

4.3. Selection of HRM System for Institute of Science and Technology of Vietnam

The modern HRIS is designed not only just the compensation and benefits department to meet the needs of the entire HR function. New technology in database systems could make information be generated by the HR function about each employee, applicant, or position to be tracked, and more importantly, integrated with other data for decision-making purposes (Michael Bedell, 2008). HRIS also offer simplification in
processes such as performance appraisals. The software tracks core-competencies and provides the manager with tips for employees who need improvement or coach. It can also alert the supervisor to orient within the department that may indicate a need for training or management attention to serve the organization’s goals. These appraisal systems also help companies with numerous locations to manage consistently across operations (Lori Bussler & Elaine Davis, 2002).

Relying on the analysis of the organization needs and the system characteristic of HRIS, we suggest the Institute of Science and Technology of Vietnam to select HRIS as the Human Resource Management System.

However, the selection of an appropriate HRIS is a time consuming process. Therefore, the Institute can hire a consultant to help with the process or must be ready to commit time and the money to do it right.
Chapter 5 Conclusions

This study aims to get an overview of the Human Resources Management in the organization and the trend of computerizing the process of HRM nowadays. Many organizations are hesitating in selecting a good Human Resources Management System to implementation within the organization. Therefore, the selection criteria we present in our study try to propose some clue for organization to have better selection process.

For selecting suitable software, it is important to identify the needs of the users and the expectations from the potential software. The final selection should be based upon factors like functionality of software, technical-software, technical infrastructure required, and platform compatibility, how the software meets various need of the firm, and the overall cost of the software.

After studying the characteristic of HRIS and the Human Resource Management in the Institute of Science and Technology of Vietnam, We suggest HRIS as sufficient software for the Institute of Science and Technology of Vietnam.
References


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