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DECISION SUPPORT SYSTEM FOR HUMAN RESOURCE MANAGEMENT OF THE ORGANIZATION

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As considering the strategic role of human resources and the inadequacy of human resource information systems to provide information for efficient decision making. The study explores the main components that should comprise an integrated human resource management system, highlighting their relationships, the decision tools that can be put into practice and the levels of analysis that must be conducted. This paper presents an innovative multi-agent architecture of decision support system. The multi-agent system is divided into three layers: the strategic management layer, the tactical management and the operational management layer. The multi-agent layer has its own knowledge base that comprises all the data and know-how to carry out task and to handle interaction with the other agents and its environment. Lastly, the theory of typical system management, the method of information collecting and knowledge discovery.

Keywords: Decision Support System (DSS), Human Resource (HR)

INTRODUCTION

With the use of large database system, human resources management system integrates almost all the information sources data, which relates to human resources such as pay and benefits, recruitment, individual career design, training, position management, performance management, job descriptions. An important decision support system function of HRMS is data processing and analysis, making predictions and decision support for the management. The work can be done automatic, cross-platform and cross-network by HRMS. The development of human resources management system makes the human resource management tools and processes to create great changes. The changes must be technical change which causes a new impact and influence for the theory of human resources management system. It provides new way and method to build distributed and open system of many fields as written above. With the strong human resource decision support system not only the functionality of the organization improves but the organizational culture also improved.

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HUMAN RESOURCES DECISION SUPPORT SYSTEM

DSS: As the HR practices should be engaged in a way to build a coherent HRM system that supports decision making at corporate level. The definition of a "system" includes that, it is a set of interacting or interdependent entities, each one being described by a number of characteristics, forming an integrated whole that is in constant communication with the external environment. HRM system only as a sum of unrelated HR practices. The interactions among practices lead to what Ichniowski *et al.* (1997) said. "The basic assumption is that the effectiveness of any practice depends on the other practices in place. If all of the practices fit into a coherent system, the effect of that system on performance should be greater than the sum of the individual effects from each practice alone". Human resources management includes recruitment, jobs, training, incentives and other daily work and process, such as recruitment, attendance management, training management, performance and benefits management. These everyday tasks include strategic planning, management control and the practical implementation of different levels, and these activities are not single, but a set of interlocking processes. For large scale corporate human resources information, users often want to observe and describe by the simple form, and want to describe the information from different aspects by a way of convenience and flexibility.

Information visualization can be done by the technology dimension of stratified. All of the automated tasks, such as data complete, transmission, racking, sign-off, query, statistics and analysis can be done by using this technology. The management or uses can finish all of the tasks by simply using a browser and internet, which can enhance greatly the communication skills and efficiency of human resources management. By this way, external assistance, shared services, scenario and predict other characteristics can be achieve to reduce costs, improve efficiency, and improve human resources management mode of operation purposes.

HRMS Requires HRMS Task Visualization Dynamic Decision Model. HRMS Solution Decision Support Salary Recruitment, Training, Performance According to the resource-based view of the firm (Barney, 1991) the basis for competitive advantage lies primarily in the resources it possesses. Researchers in the field have proposed a number of approaches on HRM systems. The behavioral perspective (Jackson *et al.,* 1989) suggests that an effective HRM system acquires, develops and motivates the behaviors necessary to enhance firm performance. The common theme in this developing literature is an emphasis on utilizing a system of management practices giving employees the skills, information, motivation and latitude resulting in a work force which is a source of competitive advantage (Guthrie *et al.,* 2002) B. Human Resource Information Systems According to Tannenbaum (1990) HRIS is a systematic procedure to acquire, store, manipulate, analyze, retrieve, and distribute information about an organization's HR.

Usually, HRIS is restricted to a transaction processing or record—keeping role. HRIS should focus on incorporating features that allow the organization to decide on issues regarding HR, not only on issues how HR perform tasks better. Decisions on how, when, why and who to select,

evaluate, train and reward must be supported through a Human Resource Decision Support System (HRDSS) that will be much more than a simple information system, only to store the information electronically. This HRDSS should use sophisticated tools, techniques and methods in order to be tied to a well designed HRM system. In that way, it will provide outputs of high quality and precision that the administration at every level can use and make any decision at any time. Summarizing the previous paragraphs, HRM systems should be designed, based on the need of integration of certain practices. Then, appropriate techniques to model the system should be used and finally it should provide the necessary tools to develop the system.

Category	Intelligent Techniques used
Staffing	
Personnel Selection	Expert system/Knowledge-based system [6]and [7]Data Mining [8] and [9]Artificial Neural Network[10]and [8]
Training and Development	
TrainingDevelopment	Knowledge-based system [11]Expert System [12]Rough Set Theory [13]
Motivation	
Job Attitudes	
Performanceappraisal	Artificial Neural Network [14]Fuzzy logic[15]
Administration	
Meetingscheduling	Software agent[16]

THE PROPOSED FRAMEWORK

Components

1. Personnel selection is one of the most critical functions of HRM. Apart from the straightforward fact that an organization should be staffed with the right people, a wrong hiring decision can lead to serious consequences. This is one of the important decision of the management on which the organizational development depends. Extensive literature can be found on selection methods, their validity and reliability (Schmidt and Hunter, 1998).
2. Employee appraisal: An important factor that is linked to long term success and growth of an organization is its capacity to evaluate employees' performance and in addition the capacity to use the relevant information in order to improve employees' as well as organizational performance, Employee appraisal should not be conducted only against the outputs / results but also against behaviors and attitudes come into practice.
3. Compensation system has become more and more a really complicated issue for employers. It is not only to determine the base salary, considering the years of experience. Compensation strategy can be used as a motivation and satisfaction incentive and as a recruitment and retain tool. In parallel, it is the mirror of the values and beliefs that form the organizational culture.
4. HR Development (HRD) is a wider concept than the one of HR training. Training is mainly applied to improve the technical skills that cover short term needs of an organization. Development includes training but is considered as a more strategic aspect. It refers basically to the key personnel of the organization. HRD facilitates the development of core capabilities that are critical in developing and maintaining sustained competitive advantage (Garavan, 2007) Core capabilities include positive behavior and

ability to adapt to a rapidly changing environment and rational decision making, creativity development, motivation, human behavior understanding skills. The above mentioned are some examples of what is called management development (Espedall, 2005), i.e., the development of specific capabilities of the future leaders of an organization.

RELATIONSHIPS AMONG COMPONENTS

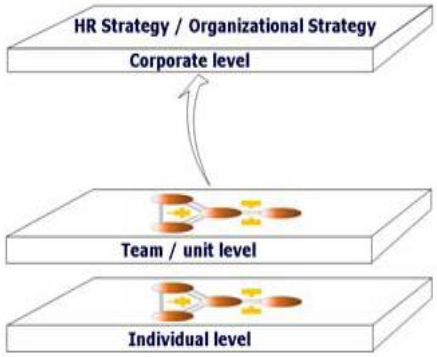
1. During personnel selection process, information on technical skills, abilities, professional experience and even personality is gathered through either self-report tests or interviews, methods that does not picture the future performance. Selection process can only be a predictor of performance. Thus, the objective is to design as better a predictive system as possible. Employee appraisal is the phase that confirms the application of particular competencies, based on performance standards and demands of the specific position. Employee appraisal can comprise a critical tool monitoring the relevance of the selection process. Thus, a well designed employee appraisal, can give feedback, through learning mechanisms, to the selection process in order that the right people are hired, placed and promoted in the right positions.
2. There are two dominant compensation strategies. The first one uses academic titles and professional experience as the only decision criteria in order to set the level and type of salary. The other follows the concept of linking each job position with a respective wage. These two practices, bearing in mind that high level positions are occupied by experienced personnel, tend to become identical. As an employee acquires more experience, he occupies higher positions and receives higher wage. Compensation strategy can play a motivational role to performance improvement. That means a two-way relationship between employee appraisal and compensation.
3. As mentioned in a previous section, HRD plays a dual, both tactical and strategic role, targeting on the one hand the coverage of specific short term technical needs of an organization (mainly through technical training) and on the other hand the management and development of potential future leaders and their careers. The decisions that should be made refer to when, on what and who to be trained. The answer can be supported by the employee appraisal process. Appraising employees, it is possible to sort them into categories, each one to be linked to particular training and development programs or even to create individual programs for each one of them. Giving an example, the appraisal of a programmer/ developer can reveal weaknesses on specific features of performance (e.g., inefficiency on programming techniques). A personal training program can be designed using material relevant to these weaknesses. In general, there is a two way relationship between training/development and employee appraisal process. Theoretically, training output advances an improved future performance for the trainee. This indeed must be proved in practice. An effective training can be confirmed through the next employee appraisal.

4. Training can be closely linked to personnel selection practice. It is common, due to limited time or budget or because of the inadequacy of the recruitment phase to attract high quality candidates, the final selection decision not to be the ideal one. Thus, training and development practice should receive feedback from selection process and provide the necessary tools to close a potential competence shortage.

LEVELS OF ANALYSIS

Deciding on HR involves more than deciding only on each one of the individuals; HR decision support must also incorporate multi levels of analysis. An integrated framework should include interrelated practices referred to team/unit level, apart from individual level. For example, decisions on team/unit members' selection, team/unit performance or team / unit training are critical. This is essential in order to obtain the whole perspective at organizational level, which links HR strategy with organizational strategy. The decision support system must provide the tools and mechanisms to allow this level of analysis regarding certain HR practices. Figure 1 depicts the multi level perspective as concerns individual and organizational level.

Figure1 : Multi Level Perspective Model



SUGGESTIONS

Intelligent system and soft computing technologies are new technological platforms, whereby intelligent logic is now usually inherent in the processing of all decision support tools [20] HR DSS as a part of Intelligent System applications play the same roles to assist decision making process. In addition, applications and intelligent techniques of HR DSS need a lot of attention and efforts, from both academicians and practitioners. From this study, we can see the potential of HR DSS applications for future works. Firstly, there are many problem domains in HRM that can be explored by intelligent system researchers. In this case, the researchers should have the effort to identify problem domains where tools are needed to transform uncertain and incomplete data into useful knowledge. For that reason, we are trying to explore HR DSS applications for human resource decision. Secondly, researchers agree that hybrid intelligent techniques are the best approach to support decision making especially in reasoning and learning. We have embedded the HR DSS framework using hybrid techniques, i.e., Knowledge-based system and Artificial Neural Network (ANN) approaches. This process can be enhanced by continuous development in web-enable tools, wireless protocol and group decision support system, which can expand the inter-activities and perverseness decision support technologies. In system development, we can utilize this technology to expand the capabilities of the application.

In this paper, most researches were

discussed from different categories. However, we would like to get information from HR DSS application and intelligent techniques applied for different problem domains in HRM field published in order to broaden the horizon of academic and practice work on HR DSS.

CONCLUSION

We conclude that DSS applications and intelligent techniques that are applied are developed towards the expertise orientation and DSS application development is a problem-oriented domain. Finally, the ability to continually change and obtain new understanding is the power of DSS, and will conclude that DSS applications and intelligent techniques that are applied are developed towards the expertise orientation and DSS application development is a problem-oriented domain. Finally, the ability to continually change and obtain new understanding is the power of DSS, and will be the DSS applications of future work. It is also widely accepted that a HR practice contributes to the objectives set only if it is applied in combination with others. Thus, what adds value to an organization is a system of HR practices put in place. In depth analysis of the relationships among HR practices in order to clearly define the causality and the exact outcomes. The choice of the suitable technique to support each HR practice and the relationships among practices, at every level of analysis

REFERENCES

1. Ichniowski C, Shaw K and Prennushi G (1997), "The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines," *American Economic Review,* Vol. 87, No. 3, pp. 291-313.
2. Barney J (1991), "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, Vol. 17, No. 1, pp. 99-120.
3. Jackson J E, Schuler R S and Rivero J C (1989), "Organizational characteristics as predictors of personnel practices," *Personnel Psychology*, Vol. 42, No. 4, pp. 727-786.
4. Guthrie J P, Spell C S and Nyamori R O (2002), "Correlates and consequences of high involvement work practices: The role of competitive strategy," *The International Journal of Human Resource Management,* Vol. 13 , No. 1, pp. 183-197.
5. Tannenbaum S I (1990), "Human resource information systems: User group implications," *Journal of Systems Management*, Vol. 41, No. 1, pp. 27-32.
6. Hooper R S *et al*. (1998), "Use of an Expert System in a personnel selection process. Expert Systems and Applications", Vol. 14, No. 4, pp. 425-432 of Manpower, 1995. 16(2): p. 17-34.
7. Mehrab M S and Brojeny M F (2007), "The development of an expert system for effective selection and appointment of the jobs applicants in human resource management", *Computers & Industrial Engineering*, Vol. 53, No. 2, pp. 306-312.
8. Huang M J, Tsou Y L and Lee S C (2006), "Integrating fuzzy data mining and fuzzy artificial neural networks for discovering implicit knowledge. Knowledge-Based Systems", Vol. 19, No. 6, pp. 396-403.
9. Chien C F and Chen L F (2008), "Data mining to improve personnel selection and enhance human capital: A case study in

high-technology industry", *Expert Systems and Applications*, Vol. 34, No. 1, pp. 380-290.

10. Huang L C *et al*. (2004), "Applying fuzzy neural network in human resource selection system", in Proceeding NAFIPS '04.IEEE Annual Meeting of the Fuzzy information.
11. Liao S H (2007), "A knowledge-based architecture for implementing collaborative problem-solving methods in military e-training", Expert Systems and Applications.
12. Chen K K *et al*. (2007), "Constructing a Web-based Employee Training Expert System with Data Mining Approach", in Paper in The 9th IEEE International Conference on E-commerce Technology and The 4th IEEE International Conference on Enterprise Computing, E-Commerce and Eservices (CEC-EEE 2007).
13. Chien C F and Chen L F (2007), "Using Rough Set Theory to Recruit and Retain High-Potential Talents for Semiconductor Manufacturing. IEEE Transactions on Semiconductor Manufacturing", Vol. 20, No. 4, pp. 528-541.
14. Tung K Y *et al*. (2005), "Mining the Generation Xer's job attitudes by artificial neural network and decision tree - empirical evidence in Taiwan", *Expert Systems and Applications*, Vol. 29, No. 4, pp. 783-794.
15. Ruskova N A (2002), "Decision Support System for Human Resource Appraisal and Selection", in Paper in First International IEEE Symposium "Intelligent Systems".
16. Glenzer C (2003), "A conceptual model of an interorganizational intelligent meeting-scheduler (IIMS)", *Strategic Information Systems*, Vol. 12< No. 1, pp. 47-70.
17. Schmidt F L and Hunter J E (1998), "The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings," *Psychological Bulletin,* Vol. 124, No. 2, pp. 262-274.
18. Garavan T N (2007), "A Strategic Perspective on Human Resource Development," *Advances in Developing Human Resources*, Vol. 9, No. 1, pp. 11-30.
19. Espedal B (2005), "Management Development: Using Internal or External Resources in Developing Core Competence," *Human Resource Development Review,* Vol. 4, No. 2, pp. 136-158.
20. Shim J P *et al*. (2002)," Past, present, and future of decision support technology", *Decision Support System*, Vol. 33, No. 2, pp. 111-126..

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