

## OPPORTUNITIES FOR IMPLEMENTING HERMES 5.2 IN THE HUMAN RESOURCE MANAGEMENT TEACHING

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**Abstract.** Computerized information systems are essential and indispensable part of the modern business management. Analysis of literature revealed the growing need for building new competencies in the Human Resource Management training through the introduction and use of an integrated information system - HeRMeS® 5.2. Trends and opportunities for improving the competitiveness and the effectiveness of the higher education are going to be examined for the reason to bring together the sides of the knowledge triangle. The tool for achieving that objective is to implement a practical oriented training, to meet business needs of highly qualified personnel with specific skills and knowledge. Also this could have positive impact on attracting more students to work in the area of management and human resource development. Using HeRMeS® 5.2 training in Human Resource Management helps to increase competitiveness of professionals, to develop information society and also this system is in compliance with the objectives of Europe 2020 Strategy for intelligent, sustainable and inclusive growth. Possibilities of using HeRMeS 5.2 for students training in HRM are analyzed. A case study for implementing an e-learning course in the HR teaching is presented in the paper.

**Keywords:** integrated information systems, practical education, e-learning, human resources, competitiveness.

**Jel classification:** I23, J24, L86

### 1. Introduction

Knowledge economy is the newest model in the continuous search for higher and sustainable growth. It is a new, more precise tool for measurement and analysis of economic development, where useful knowledge is perceived as a major resource (ARC Fund 2005; Grabot *et al.* 2008; Kimiz 2005; Pabedinskaite 2010; Young 2008). Knowledge and the ability to create it, save it, disseminate it and used it effectively is a key competitive advantage in business. Two of the four pillars of the knowledge economy are education and training and information and communication technologies (ICT). The development and use of ICT is the most visible product of the knowledge economy.

The dynamics of the labor market, changing technologies, business models and opportunities for professional and personal development have led people to acquire not only a basic education but also to formed a lifelong competence of searching, selecting and using effectively specialized knowledge (ARC Fund 2011; Jevinga, Sundukova 2008). The demand and supply of specific knowledge creates a potential for improving the quality of human capital and providing opportunities for

higher employment and sustainable economic development.

The objectives of this paper are to explore the tendencies and the perspectives of changing the training of Human Resource Management (HRM) and clarify the opportunities for increasing the higher education efficiency in this area.

Methods used in this paper are analysis of literature, analysis of trends in HRM and possibilities of implementation HeRMeS 5.2 in education.

The introduction and use of specialized e-learning, based on integrated information systems is crucial to build new core competencies needed for work in the modern innovative economy (Garleja, Skvorcova 2008; Taneva, Dimov 2010; Taneva 2011). The increased use of ICT in education and training process is in line with the aims of the European Union for intelligent, sustainable and inclusive growth. The adoption and implementation of the Europe 2020 Strategy should provide high levels of employment, productivity and social cohesion. Key activities are education and training and human resource development through gaining new knowledge and skills, application of progressive ICT, reforming labour

markets through creating new jobs and providing qualified and skilled professionals (Europe 2020).

The introduction of e-learning in a HRM course by using a computerized information system for personnel management and development enables teachers and students to recreate close to business practice environment. They are able to successfully apply their knowledge and to form new professional skills.

## 2. Information support in HRM

Information on human resources in the organization is equally important for the management and development of the organization, such financial and material resources information. Information support is vital for human resource management in making important strategic and operational decisions. It is necessary to achieve three objectives: 1. Storage of personal data in the organization, 2. Create a basis for decision making in planning, recruitment, selection, training, promotion and other areas. 3. Provide statistics for senior institutions (Kolchagova 2009).

Information requirements in organizations are general and specific. Common requirements concern richness of content and volume, appropriate form of presenting, accuracy and reliability, economy, etc. The specific requirements depend on the type of information which is determined by the nature of management decisions affecting the personnel in the organization (Kolchagova *et al.* 2009).

ICT are embedded in contemporary innovation systems and they are an essential part of the establishment, development, implementation and improvement of organizational and management processes in the business organizations. Computerized Information Systems (CIS) have become an important factor in saving work efforts and a key tool for improving the efficiency of the organization as a whole (ERP Information Systems 2009; Elskytė, Zinkevičiūtė 2008; Grabot *et al.* 2008; Laudon C., Laudon P. 2000; Monk, Wagner 2008; Taneva 2011; Pabedinskaite 2009).

According to the definition of Kettley and Reilly (2003), CIS for HR consists of a fully integrated within the organization network of data, information, services, databases, tools and transactions related to HR. CIS aims to facilitate access to HR data, to rationalize, formalize and standardize all processes; to provide more consistency and accuracy of data; to increase operational efficiency and improve the internal profile of HR (Armstrong 2009; Torres-Coronas 2009; Gueutal, Stone 2005). The system for HRM is a set of elements and processes aimed at improving and developing the activities of any business organi-

zation. The existence and proper functioning of CIS affects the mission, objectives and growth of the organization. The HR system is a product aimed at comprehensive and complete solution of problems relating to the proper determination of the needs of personnel, optimizing organizational structure, performance appraisal; establishing an effective system of payment etc.

The main functions of automated HRM systems are:

- To store personal data of employees containing information for work experience and previous experience, qualifications, leave and absences from work.
- To store information about the position, including required qualifications, remuneration and benefits, job mode, workplace, job description.
- To automate routine activities in the field of HRM, freeing the people's potential for development and continuous improvement of processes.
- To formalize the HRM processes in the organization, ensuring compliance with established rules and facilitates the management of human capital, regardless of the number of employees and their physical location.
- To summarize the information on the functioning of individual policies;
- To compile reports which expose various aspects of HR information.
- To offer tools for measuring the effectiveness and to support the strategic decision making.

Integrating all activities of HRM in a unified CIS allows professionals and HR managers to track the relationship between processes and their interactions. Managers are able to analyze all information for making the most appropriate decisions affecting the personnel in the organization.

## 3. Routine, programmable and creative activities in HRM

HRM includes both traditional management functions such as planning, organizing, leading and control, and a number of specific operational functions and activities such as recruitment, development, payment, integration and release. HRM is based on defining the types of functions and activities according to similarity of content and tasks. They are differentiated and grouped according to the size of the organization. In the literature there are different classifications of

operational functions and activities (Vladimirova 2006; Kolchagova 2009).

In Table 1 it is shown an example of a classification which defines seven basic management functions with the respective component activities (Kolchagova 2009).

**Table 1.** Functions and activities according to similarity of content and management tasks (Kolchagova 2009)

Function	Activities
Planning and resourcing	Job design. Work analysis. Planning of HR needs. Recruitment of candidates. Selection of personnel.
Performance appraisal and performance management	Performance appraisal. Management of occupational achievement.
Human resources development	Training. Improvement of the managers. Career development.
Payment	Job evaluation. Pay.
Providing safe and healthy working conditions	Influence of operating modes. Working conditions.
Establish and maintain harmonious employee relations	The contract of employment. Participation of employees in the management. Communications and employee relations. Conflict management. Change management.
Administrative and information services	Basic administrative procedures. Information support.

HRM processes can be divided into routine, programmable and creative processes, depending on the capabilities and degree of automation, process standardization and their implementation within the CIS. The routine activities are related to administrative and information services. They are in a result of concrete and clearly defined information on procedures and normative requirements. Such routine activities can be consequences from changes in legislation and the HR specialists have only to apply them, for example: the states for pension age, work experience pay rates, etc.

The programmable activities are based on information for the personnel in the organization and they can affect decisions for promotion, training, career development, etc.

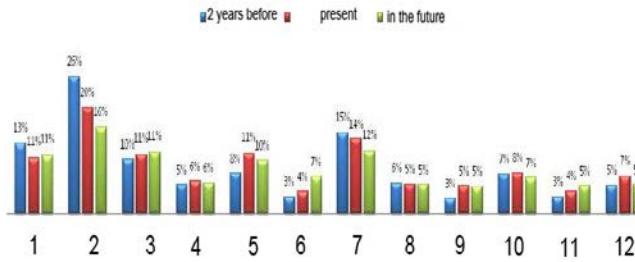
The creative activities concern the decision making based on detailed, profound gathered and analyzed information leads to improvement and development of the organization. In the creative process the HR specialist or a manager is taking a more in-depth, rational and considered decision. This can be a conflict or problem solving, where the manager uses not only the information of the current situation but also relies on his/ her own experience, professional skills and intuition.

Routine activities are similar and repetitive, while creativity is a new innovative approach to problem solving and it is different depending upon the situation.

Each of the HRM functions listed in Table 1 in a certain aspect can be seen as routine, programmable or creative, depending on whether it could be automated within the CIS, what information is needed and what type of decision.

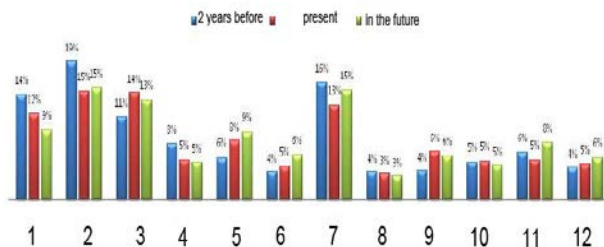
This year TechnoLogica EAD made a survey for the distribution of activities and roles in the HR departments which included many Bulgarian companies from different industries. The survey results (TechnoLogica EAD. Meeting of users of HeRMes 2011; Petrov 2011) showed what were the priorities for HR management and development and what are the expectations projected to change these priorities in the future. The responses were based on general observations of the HR managers in these companies. The percentage distribution of activities is in terms of ownership, employee efforts and funds invested and the time collaborators spent over the past two years.

Fig. 1 and 2 show the percentage distribution of processes in the HR departments of companies with up to 800 employees and with more than 800 employees. The survey results revealed that most efforts are devoted to activities of personnel administration, payment and wages, recruitment and training of personnel in most of the Bulgarian companies. Overall, there was similarity between the company's response above and below 800 employees. For the companies with up to 800 employees it is typical to reduce the efforts for administration, salaries and recruitment and reorient at training, employee evaluation and career development. This is a proof that people are increasingly seen as a key asset and their knowledge, skills and qualities are fundamental to the competitiveness of the organization. There has been a strengthening of analytical reporting activities of the HR departments, which indicates the orientation towards effective and efficient use of the human capital in the organization.



**Fig.1.** Distribution of processes in the HR departments of companies with up to 800 employees (Source: TechnoLogica EAD. 6<sup>th</sup> Meeting of users of HeRMeS. 2011. Tryavna. Bulgaria.)

1. Recruitment;
2. Administration personnel;
3. Training;
4. Introduction of new employees;
5. Appraisal and performance;
6. Career development;
7. Payment;
8. Providing safe and healthy working conditions;
9. Budgeting;
10. Planning needs of personnel and reallocation of state;
11. Reports and analyzes on personnel;
12. Communication with other units and departments.



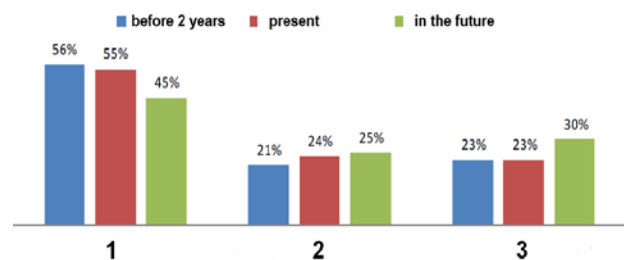
**Fig.2.** Distribution of processes in the HR departments of companies with more than 800 employees (Source: TechnoLogica EAD. 6<sup>th</sup> Meeting of users of HeRMeS. 2011. Tryavna. Bulgaria.)

In companies with more than 800 employees there are also trends to reduce work intensity and the duration of service functions in the administration of personnel, recruitment and payment.

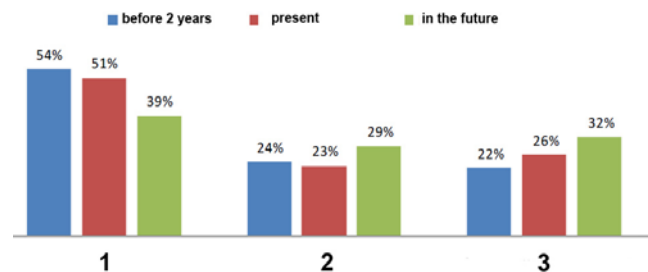
The probable reason is that most of these processes are routine and can be automated and easily managed through the use of CIS. Activities, related to professional growth and development of employees in the company, are expected with the significant growth in the future. Programmer for talent management and career planning development will help for that. The analysis is seen as an important support function for long-term effectiveness of the organization. Developed communications strengthen the role of HR as a strategic

partner to the senior management of the organization. The observed change shows a shift from routine to creative processes in HRM due to the growing penetration and use of computerized information systems for HRM. CIS contribute to faster and quality administration of personnel data, facilitate access to data, reduce routine work and enable HR professionals to engage in more creative tasks directly related to management and development of human potential in the company.

In Fig. 3 and 4 it are shown the percentage distribution of roles in the HR department of companies with up to 800 employees and with more than 800 employees.



**Fig.3.** Percentage distribution of roles within the HR departments of companies with up to 800 employees (Source: TechnoLogica EAD. 6<sup>th</sup> Meeting of users of HeRMeS. 2011. Tryavna. Bulgaria.)



**Fig.4.** Percentage distribution of roles within the HR departments of companies with more than 800 employees (Source: TechnoLogica EAD. 6<sup>th</sup> Meeting of users of HeRMeS. 2011. Tryavna. Bulgaria.)

Examined roles are: to administer the processes (1), develop methodologies and procedures (2) and analysis and implementation of processes and policies and monitor their effectiveness (3).

Currently more than half of the efforts of those working in HR departments in Bulgarian companies are directed to administer and support HR processes. The trend is to reduce these efforts and shifting them to collect feedback on the effectiveness of the implementation of processes and policies in HRM and improving them.

The survey clearly shows the HRM activities' division into routine, programmable and creative

processes. The future trend is shifting the efforts, time and resources spent for routine to creative activities through using CIS which will facilitate the administration and servicing of common HR processes.

The survey shows the current state of modern HRM in leading organizations in Bulgaria. It is a basis of what new knowledge and what specific practical skills should be offered to students in HRM courses so that the future HR specialists are professionally trained and to be competitive on the labour market. Students must learn to use advanced information technologies, some of which are electronic automated systems for HRM, to be able to operate successfully in the management and administration of personnel.

#### 4. Features of HeRMeS 5.2

In recent years an increasingly wide range of companies realize the advantages that brings a complete solution deployment, automated management of all activities related to planning, recruitment, organization, evaluation, payment, communication and use of employees. The management information systems for HRM available to Bulgarian companies are not fewer. There are over 20 companies actively developing their packages: BORA HR Management, Bulsist-BG "Human Resource Management", EKOM 2002, Expert M - Personnel and Payroll, HeRMeS, HR Manager, Microinvest Payroll and Personnel, Omeks 2000, Payroll Atlas, SysHR, WorkStream - HR & Payroll, STYLE - Payroll and Personnel etc.

HeRMeS 5.2 is a Bulgarian computerized information system of the highest class for management of human resources. HeRMeS is an innovative product of TechnoLogica EAD with more than 15 years of history and a number of prestigious national and international awards and honours (TechnoLogica EAD. 2011. *HeRMeS 5.2*). HeRMeS 5.2 is an integrated, flexible system that automates the management of all human resource activities related to planning, recruitment, organization, appraisal, development, compensation and payment, providing healthy and safe working conditions, communications and others. The system is implemented and used by leading companies in Bulgaria, as well as organizations in Macedonia and Bosnia and Herzegovina.

HeRMeS 5.2 is a centralized and fully integrated information system covering all activities related to recruitment, selection, evaluation and development of personnel, managing budgets, defining the rules and requirements for different departments and positions and succession of their positions and appointments of officers.

The system automates the routine procedures of HRM; provides funds for implementation of policies and rules throughout the organization (HeRMeS Self services) and enables the use of multiple analytical queries, reports, metrics and key performance indicators (KPIs), which makes data in information, provide opportunities for measurement and analysis of results and help making correct management decisions. HeRMeS integrates with Identity Management (IdM) and Business intelligence (BI) systems. The system helps to improve administrative efficiency by accelerating the exchange of information, facilitating analysis and detection of trends in HRM; reduction of human resources and allocating them to perform other activities.

The system is characterized by:

- Rich user interface.
- Maintenance history data.
- Configure access control.
- Additional attributes and information.
- Multilingual interface.
- Multi-data.
- Specialized designer of the software components.

HeRMeS 5.2 is built modular and supports all activities of personnel management, and synchronize team work of specialists in human resources and provides independent work on specific areas. The modules are grouped into packages that automate core business processes (Fig. 5).

The main modules are: structure, personnel, recruitment, payments, performance management, compensations and benefits, training, workplaces, schedules, absences, exams, surveys, analyses and reports, etc.

To provide effective support and information to make an objective assessment of opportunities and activities of human capital, the system automates the following activities in HRM:

- Control of employee relations.
- Monitoring compliance with conditions.
- Control of working time.
- Absenteeism.
- Work discipline.
- Training.
- Payment.
- Generating employment records.
- Maintenance of employment records.

Besides the listed features, different organizations seek different functionalities. Depending on their size and the specifics of its business consumers have increased requirements for these and other characteristics of the system of personnel management and payroll calculation.

HeRMeS 5.2 is a high tech product developed by means of using Oracle and Oracle database.



within them and make managerial decisions. Using various modules and functionalities of HeRMes 5.2 students have the opportunity to go through all stages of the residence of employees in the organization from their application to their leave. Students are familiarized with detailed personal and collective data of employees in the organization and learn to administer and analyze it according to the situation and tasks, they are given.

Personal data, necessary for the HRM, which students work with, are:

- Documents filed in the application which remain in the archive, results of interviews and tests.
- Salaries, benefits and other forms of payment and stimulation.
- Data for training or development.
- Leave – regular, hospital, etc.
- Apprises documents, promotion, performance management.
- Schedules, shifts and other.

Collective data are related to job description, work characteristics, appraisal and performance management system, payment system, the establishment plan for all job descriptions, information relating to systems for training and career development, data on turnover, illness, etc.

Students see a company from inside and in practice how a business operates and how it interacts with external organizations and institutions. They have the opportunity to prepare statistical information to meet the needs of foreign and superior institutions, which includes data on the amount of personnel (total and by category) the wage level, deductions for social security, turnover, work hours, etc. Special attention is paid to developing tools for evaluation and selection of personnel for comparison of working conditions and desires of employees to generate various reports and statistical analysis for decision making.

The training in HeRMes 5.2 allows students to see in practice how and where to apply the knowledge and skills they received from the HRM course. Students have the opportunity to learn with one of the best contemporary and modern information systems for human resource management, which is used by leading companies on the Bulgarian market. Thus, students have the opportunity to improve their knowledge and information communication skills.

## 7. Conclusions

Analysis of literature revealed a rising need of improvement in HRM training. Importance of new teaching methods, such as e-learning, based on

identified activities in HRM revealed. The method to increase the higher education efficiency in ICT usage in HRM area is presented - implementing HeRMes 5.2 in e-learning course.

Computerized information system is a tool to help and support adequate and effective management decisions and its implementation in HRM teaching enriches and expands students' knowledge in other important aspects of the daily work of HR experts. The introduction of e-learning in HeRMes 5.2 helps making the HRM tutorials to be more interactive and practical and being more desired by students.

Analysis of possibilities to apply business technology in the learning process revealed the necessity of introducing e-learning as a part of HRM teaching. The study showed current trends in HRM and the connection that CIS can carry between business practice and the educational process.

A case study of implementing e-learning course in HRM was presented. Case study shows that proposed idea for virtual enterprise training is a key factor for an effective and interactive teaching paradigm within the model of HeRMes 5.2 e-learning course.

Dynamic economic changes require new specific skills that are difficult to predict, but the introduction of e-learning in HRM is a step towards convergence of the gap between educational institutions and business. Bridging the gap in the educational quality of service will become with the help of proactive search for a solution to meet the demanding requirements of employers. E-learning in HeRMes and other CIS provides new skills and abilities of young professionals.

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