University of Novi Sad
Technical faculty "Mihajlo Pupin"
Zrenjanin

AIIT

International Conference

PROCEEDINGS OF INTERNATIONAL CONFERENCE ON APPLIED INTERNET AND INFORMATION TECHNOLOGIES

Serbia, Zrenjanin, October 25, 2013

UNIVERSITY OF NOVI SAD
TECHNICAL FACULTY "MIHAJLO PUPIN"
ZRENJANIN, REPUBLIC OF SERBIA

International Conference

International Conference on Applied Internet and Information Technologies ICAIIT 2013

P R O C E E D I N G S

Zrenjanin
October 25, 2013

Organizer:
University of Novi Sad, Technical Faculty ”Mihajlo Pupin”, Zrenjanin,
Republic of Serbia

Publisher:
University of Novi Sad, Technical Faculty ”Mihajlo Pupin”
Djure Djakovica bb, Zrenjanin, Republic of Serbia

For publisher:
Milan Pavlović, Ph. D, Full Professor, Dean of the Technical Faculty ”Mihajlo Pupin”

Technical preparation and design:
Brtka Vladimir, Lacmanović Dejan, Zdravko Ivankovic, Ljubica Kazi

Cover design:
Ognjenović Višnja

Printed by:
Printing office Diginet, Zrenjanin, Republic of Serbia

CIP - Каталогизација у публикацији
Библиотека Матице српске, Нови Сад

004(082)

INTERNATIONAL Conference on Applied Internet and Information Technologies (2 ; 2013 ; Zrenjanin)
Proceedings [Elektrosnki izvor] / [2nd] International Conference on Applied Internet and Information Technologies ICAIIT 2013, Zrenjanin, October 25, 2013 ; [organizer] Technical Faculty "Mihajlo Pupin", Zrenjanin. - Zrenjanin : Technical Faculty "Mihajlo Pupin", 2013. - 1 elektronski optički disk (DVD) : tekst, slika ; 12 cm

Tiraž 250. - Bibliografija uz svaki rad.

ISBN 978-86-7672-211-2
1. Technical Faculty "Mihajlo Pupin" (Zrenjanin). - I. ICAIIT (2 ; 2013 ; Zrenjanin) v. International Conference on Applied Internet and Information Technologies (2 ; 2013 ; Zrenjanin)
a) Информационе технологије - Зборници

COBISS.SR-ID 281228551

Circulation: 250

By the resolution no. 114-451-3096/2012-03, Autonomous Province of Vojvodina Provincial Secretariat For Science and Technological Development donated financial means for printing this Conference Proceedings.

The Conference is supported by the Provincial Secretariat for Science and Technological Development, Autonomous Province of Vojvodina, Republic of Serbia; Regional Chamber of Commerce Zrenjanin; BIZ, Business Incubator Zrenjanin.

The Role of Human Resource Information Systems in EU based on CRANET research

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Abstract - In the process of becoming strategic partner of the top management human resource management (HRM) function has to use Internet and apply adequate information system (HRIS) more and more. Human resource information system enables systematic processes for collecting, storing, maintaining, and recovering data required by the organizations about their human resources, their activities and organizational characteristics. In this paper author present the effect of Internet on HRM activities, analyze the operation of HRIS from the theoretical point of view, accompanied by empirical data analysis of Cranet data for European Union, from research period 2008/2010. The main goal of this research was to emphasize the importance, advantages and some limitations of HRIS, but also the usage of HRIS for main HR practices in the companies of EU. The methodology used in the research included exploration of the Cranet questionnaire, the sample presentation and application of statistical techniques, i.e. the application of the program SPSS Version 21.

I. INTRODUCTION

Contemporary organizations which understand the importance of human resources perform different and very specific practices to manage their people such as planning, staffing, training and development, performance management, compensations and benefits, retiring, working conditions, health and safety, employee relations, retention and policies on work-life balance, etc. As a result of technological progress and innovations, which are inevitable in modern age, HRM got one strategically important "partner" – the Human Resource Information System (HRIS). Also, beside information system used for HRM, the usage of the internet in modern business and managing is becoming more and more significant for successful performances. This can be understood as the second important change, called e-HRM. Recent studies attempted to identify the effectiveness and the importance of the usage of HRIS [10; 11; 12; 17] and E – HRM on the HR functions in the organizations [3; 5; 7; 14].

The main goal of this research was to emphasize the importance, advantages and some limitations of HRIS, but also the usage of HRIS for main HR practices in the companies of EU. The methodology used in the research included exploration of the Cranet questionnaire, the sample presentation and the application of the statistical techniques, i.e. application of the program SPSS Version 21. Authors presented the effect of the Internet on HRM activities; analyzed the operation of HRIS from the theoretical point of view, accompanied by empirical data analysis of Cranet data for European Union, from research period 2008/2010.

II. THEORETICAL BACKGROUND

At the beginning of the research, it is interesting to present to some main theoretical views related to the HRIS and E-HRM. Tannenbaum defined HRIS as a technology-based system used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information regarding an organization's human resources [15]. Also, these systems are explained as systematic procedures for collecting, storing, maintaining, and recovering data required by the organizations about their human resources, personnel activities and organizational characteristics [2]. HRIS is a tool that helps employers in retaining the right employees. This can be done by paying them competitive salaries compared to the market, and training them to develop their skills and abilities to carry out their existing and future jobs [4]. Stone sees HRIS as more than just computerized records of employees – it is an integrated approach to procurement, storage, analysis, and control of the flow of information on human resources management throughout the organization [13].

In relation with the HRIS in foreign literature and practice of HRM one more interesting concept is the e-HRM. Namely, e-HRM is the (planning, implementation and) application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of HR activities. This concept highlights several crucial aspects of e-HRM. At the outset, e-HRM utilizes information technology in a twofold manner: First, technology is necessary to connect usually spatially segregated actors and enable interactions between them irrespective of their working in the same room or on different continents, i.e. technology serves as a medium with the aim of connection and integration. Second, technology supports actors by partially – and sometimes even completely – substituting for them in executing HR activities. Hence, information technology serves additionally as a tool for task fulfillment. The planning aspect accentuates the systematic and anticipated way of applying information technology. The shared performing of tasks through at

least two actors' points out that the sharing of HR activities is an additional feature and underlines the aspect of interaction and networking. The consideration of individual and collective actors takes into account that e-HRM is a multilevel phenomenon; besides individual actors, there are collective actors like groups, organizational units and even whole organizations that interact in order to perform HR activities [14]. E-HRM has been defined as a way of implementing HR strategies, policies and practices in organizations through a conscious and directed support of and/or with the full use of web-technology-based channels [9]. It can be used for transactional activities (i.e. those that involve day-to-day transactions and record keeping); traditional HRM activities such as recruitment, selection, training, compensation and performance management; and transformational activities that add value to the organization [16]. The development of web-based technology has allowed firms to provide services directly to employees and managers through the use of self-service systems [6].

In the line with the definitions, it is interesting to mention several researches made in the past that show how HRIS and E - HRM can facilitate and help HRM process to:

- improve quality of information available,
- reduce administrative burden on the HR department,
- improve speed at which information is available,
- improve flexibility of information to support business planning,
- improve services to employees,
- produce HR metrics,
- aid human capital reporting,
- improve productivity,
- reduce operational costs and
- manage people's working time more effectively [1].

Pilbeam and Corbridge [8] presented the advantages of HRIS as:

- Speed - Computers can manage large amounts of complex data quickly.
- Reliability and accuracy - People are prone to errors, and manually generated information more open space for the occurrence of errors.
- Storage and retrieval - Storage of large amounts of data is expensive, and requires manually store data and physical space, and time. Computer data also occupy space or computer memory and time required for their entry and update, with the costs incurred as a result of a manual processing of data growing over time, while the cost of computer memory and processing decreasing.
- Consolidation - Manual data are often found in multiple locations. Often there is no complete picture of the individual employee in a single record. Usually in one company there are more of manual files pertaining to one employee.
- Making decisions - The main reason for the construction of an integrated system of data on employees is to contribute to decision-making in the organization. Strategic decisions about the direction of development of the organization should be based on information concerning various aspects of HR, and HRIS can provide accurate and precise information about it.
- The role and influence on the office staff - Good HRIS can promote the participation and involvement of HRM professionals in the process of strategic planning and improve the profile management functions of the HR administrative roles to the role of a business partner.

Findings from one recent research in 2011 pointed several goals for the introduction of the E-HRM:

- Operational effectiveness;
- Service delivery;
- Manager empowerment;
- Strategic orientation;
- Standardization [7]

Beside many advantages, here it is also important to present main obstacles and challenges in HRIS implementation. According Stone the most important challenges of HRIS are *flexibility, confidentiality and legal problems* [13]. Also, voluntary acts of employees using their companies' Internet access and IT equipments for non-work-related purposes during working time is called "cyber loafing". Another similar problem is sending messages of the employees to disclose confidential information or intellectual property infringement. In order to put an end to such problems, about 75% of the largest U.S. companies decided to record and review employee communications (including telephone calls, e-mail and internet). Other organizations use special software to prevent access to unwanted sites. Primarily refers to the sites for shopping, gambling, pornography, etc. so they carefully set policy regulating the use of e-mail and the Internet. It is suggested creating written policies that advise employees that their e-mail messages are not private and can be read by managers, that the technology used in the workplace belongs to the company and that the company reserves the right to monitor the use of their computers. All employees must sign the rules, as a sign that they have read and understand them [12].

III. METHODOLOGY

In this paper it has been used CRANET methodology (www.cranet.org) to identify the level of usage of HRIS in companies from the European Union. This international organization organizes comparative researches on the policies and practices of human resource management, using a standardized questionnaire. The purpose of the research is to provide high quality data for academics, public and private sector organizations, as well as HRM students, and to create new knowledge about human resource management practice in different countries of the world. In CRANET research period from 2008 until 2010 there were involved 32 countries, but for this analysis authors decided to

explore only data for organizations from EU region, total of 20 countries.

In this research author used data from member countries of EU, where 3795 companies gave their responses about HRM practices. Questions about HRIS and e-HRM were constructed to obtain information about existence and level of the usage of IT and Internet in HRM. Respondents were asked to state weather they use (1-yes) or not (0-no) several elements of the HRIS and e-HRM. Methodology included the application of the program SPSS Version 21. The objectives of this analysis were to:

- Find out the kind of the HRIS that organizations from countries from EU use;
- Find out the level of usage of HRIS for HR activities in EU organizations;
- Find out the existence of HRIS managers' and employees' self-service options – deployment of E-HRM in companies in EU.

IV. RESULTS OF THE ANALYSIS

First part of the analysis obtained the exploration of the kind of HRIS used in companies which operates in the EU. According Figure 1 it can be concluded that organizations from EU usually have a single primarily independent HRIS (29.5% of total number of organizations) and separated stand alone tools (28.2%). Also, integrated HRIS, interfaced into wide MIS is used in 21.6% of the companies from the EU, while 20.7% of companies do not use HRIS at all.

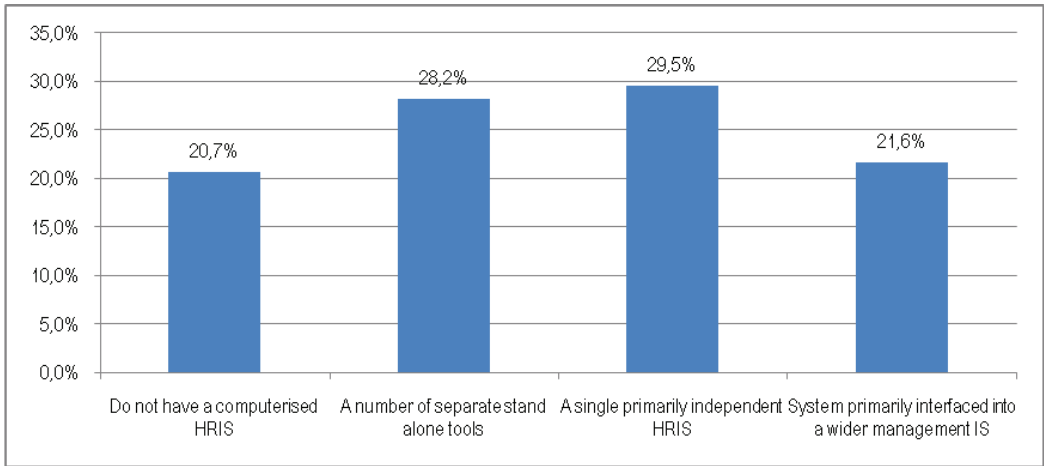

Figure 1. Type of HRIS in companies from EU
Source: Authors' research based on CRANET data base

Beside analysis of the HRIS in the EU, in total, it was interesting to explore the usage of the HRIS in several countries of the EU, since, from the table 1 below; it is obvious that there is a large diversity among countries when this issue is in question. Namely, it is obvious that there are no rules or patterns of the usage in this area. For example, some Central and Eastern Europe (CEE) countries, like Hungary and Bulgaria had a very large percentage of those companies which do not use HRIS (over 40% of companies). These are the highest percentages of companies without HRIS. On the other hand, data from Czech Republic, also the CEE country, showed that all explored companies use HRIS at some level, since there were no companies without HRIS. Some companies from other CEE countries, Slovenia (9.2%), Estonia (9.7%), also have small percentage of those companies that do not use HRIS. It is interesting to point out that some developed countries, like France, Netherlands, Denmark, Finland and Ireland also have over 20% of those companies without HRIS.

TABLE I. PERCENTAGE OF THE USAGE OF DIFFERENT HRIS IN COMPANIES FROM EU

STATE	Do not have a computerized HRIS	A number of separate stand alone tools	A single primarily independent HRIS	System primarily interfaced into a wider management IS
Austria	6,6	28,8	40,9	23,7
Belgium	15,1	38,2	20,2	26,5
Bulgaria	44,4	8,5	32,7	14,5
Cyprus	31,8	23,9	21,6	22,7
Czech Republic	0,0	11,1	35,2	53,7
Denmark	25,5	32,9	16,1	25,5
Estonia	9,7	26,4	41,7	22,2
Finland	24,6	33,8	30,8	10,8
France	33,1	45,6	16,2	5,1
Germany	9,1	34,9	32,8	23,2
Greece	37,4	33,6	18,5	10,4

Hungary	43,7	15,6	20,0	20,7
Ireland	26,0	35,0	24,0	15,0
Italy	7,7	36,8	27,7	27,7
Lithuania	24,6	23,7	28,9	22,8
Netherlands	23,9	47,9	0,0	28,2
Slovakia	21,1	13,9	38,6	26,5
Slovenia	9,2	19,4	36,4	35,0
Sweden	12,1	27,4	45,6	14,9
United Kingdom	15,7	24,5	41,2	18,6
TOTAL	**20,7**	**28,2**	**29,5**	**21,6**

Source: Authors' analysis based on the CRANET data base

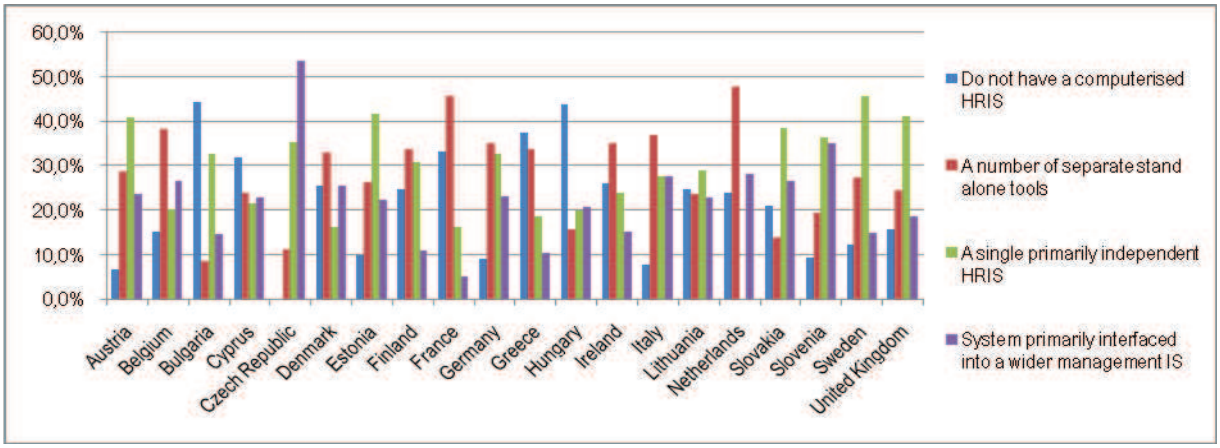

Figure 2. Type of HRIS in companies from EU – per country
Source: Authors' research based on CRANET data base

There were more companies that use HRIS in different kind, but here is also present diversity among countries in the EU. Czech Republic was the leading country in the case of the usage of the integrated HRIS. Around 54% of companies from Czech Republic use this kind of HRIS. Beside that country, in Belgium, Denmark, Italy, Netherlands, Slovakia and Slovenia there were found significant usage of integrated HRIS (over 25%). The lowest level of the usage of integrated system for HRM was found in companies from France (only 5%). The most common kind of HRIS is in term of independent system or separated tools for each HR activity. The highest usage of independent system for HRM was in Austria (40.9%), Estonia (41.7%), Sweden (45.6%) and UK (41.2%). Only Netherlands' companies do not use this kind of HRIS, while all other countries use this kind from 15% to 40%. In case of Netherlands, while companies do not use HRIS as system, they use separated tools for HRM in 48%. Companies from France (45.6%), Belgium (38.2%), Denmark (32.9%), Finland (33.8%), Germany (35%) and Italy (36.8%) also showed higher percentage of the usage of HRIS as separated tools.

TABLE II. PERCENTAGE OF THE USAGE OF HRIS FOR DIFFERENT HR ACTIVITIES IN COMPANIES FROM EU

STATE	IPR	PAY	BNF	TRA	R&S	T&D	PM	CP	WS	H&S	HRP
Austria	44,5	97,8	74,0	88,1	38,8	57,1	25,8	15,0	35,7	16,1	12,4
Belgium	91,6	94,6	76,7	81,2	53,0	65,3	53,0	25,2	37,1	27,2	33,2
Bulgaria	99,3	98,5	78,6	88,6	44,3	50,0	32,2	33,9	70,1	49,2	41,4
Cyprus	46,4	96,7	89,8	66,7	30,9	53,4	34,5	9,3	40,4	31,6	20,0
Czech Republic	100,0	92,6	43,4	88,9	35,2	51,9	13,2	18,9	28,3	50,9	13,5
Denmark	90,0	85,8	57,9	78,5	48,3	51,3	35,2	24,9	29,5	17,2	18,0
Estonia	96,9	93,5	51,6	61,9	35,5	69,2	33,3	19,7	50,0	30,2	16,4
Finland	94,7	95,8	67,4	84,2	58,7	50,0	32,2	15,6	51,1	30,3	11,1
France	89,0	97,8	49,5	78,0	37,4	71,4	27,5	20,9	49,5	27,5	11,0
Germany	72,0	90,2	73,2	89,2	48,1	53,8	44,3	23,0	35,1	18,1	8,5
Greece	97,4	94,8	69,3	72,8	41,8	56,6	40,5	25,9	54,0	20,9	29,
Hungary	93,4	82,9	89,5	76,0	29,3	61,3	50,7	17,6	27,4	17,8	28,8
Ireland	90,3	85,9	57,4	73,2	40,0	63,2	52,2	26,5	36,8	30,9	32,8
Italy	69,9	80,4	53,8	94,4	52,4	69,9	53,1	21,7	20,3	38,5	49,0
Lithuania	95,3	89,5	39,5	87,2	25,6	39,5	27,9	17,4	68,6	37,2	26,7
Netherlands	96,0	89,9	75,8	43,4	28,3	42,4	20,2	22,2	35,4	26,5	21,2
Slovakia	97,7	96,5	45,1	79,8	32,9	52,6	35,3	19,7	34,3	34,1	34,7
Slovenia	99,5	94,8	67,6	71,4	22,9	53,0	48,9	20,1	54,3	59,7	15,8
Sweden	32,5	95,9	60,6	79,2	34,8	36,1	12,4	11,9	59,5	13,7	18,6
United Kingdom	94,1	77,5	62,2	54,5	45,2	64,3	43,9	19,8	25,8	23,6	36,6
TOTAL	**81,9**	**91,5**	**65,0**	**78,5**	**41,0**	**54,8**	**37,0**	**21,0**	**41,5**	**27,5**	**23,2**

Source: Authors' research based on CRANET data base

Next part of the analysis obtained the exploration of the usage of HRIS for HR activities like staffing, training and development, compensations, etc. In Figure 3 there are presented data of the usage of HRIS for each HR activity in the EU organizations. It can be concluded that HRIS is used mostly for administrative activities such as time registration and attendance (78.5%) and personnel records (81.9%). Also, HRIS is commonly used for compensations – 91.5% of organizations use IS for payroll and 65% for benefits.

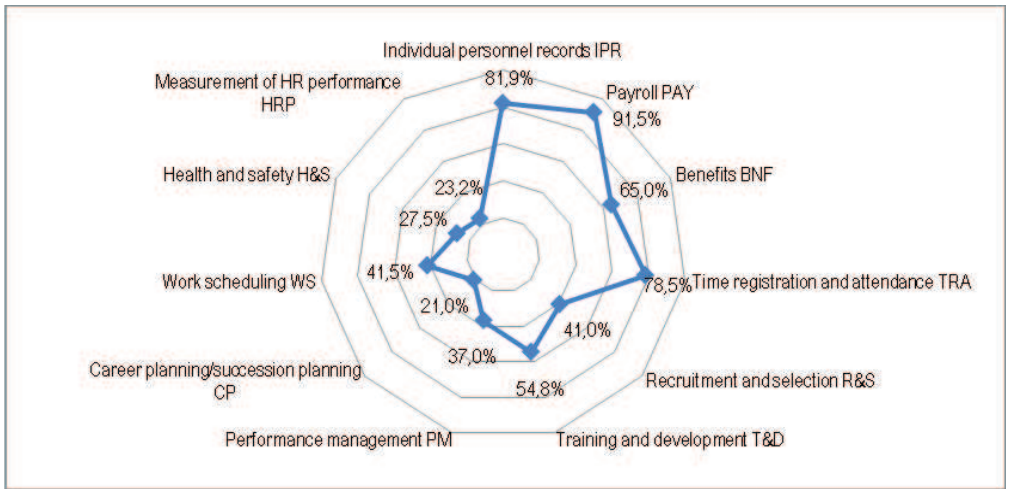

Figure 3. Percentage of the organizations that use HRIS for different HR activities in the EU
Source: Authors' research based on CRANET data base

Generally, in organizations from the EU HRIS is used at higher level compared to the past findings [18]. This usage is very low for HR performance measurement (23.2% of organizations), career planning (21%), health and safety (27.5%), etc. In case of training and development the usage of HRIS is around 55% (more than half of all organizations use this kind of HRIS). Usage of HRIS for performance management (37%), and recruitment and selection (41%) and work scheduling (41.5%) is also at high level. This is a positive trend of the growth in the area of HRM, since new computer and internet technologies

The last part of the analysis was dedicated to the exploration of the e-HRM.

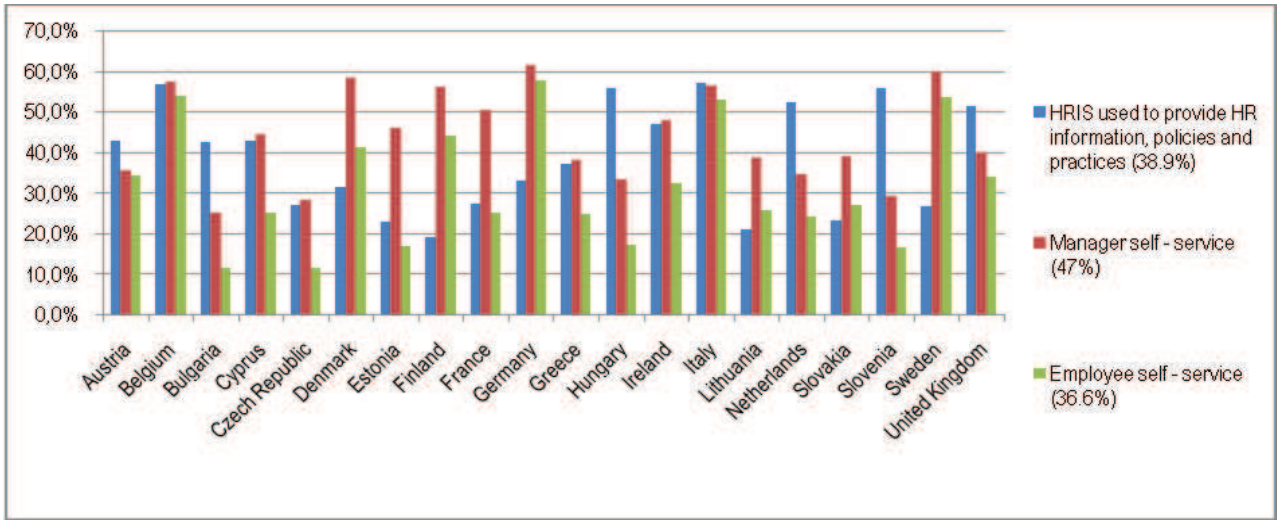

Figure 4. Stage of E – HRM in companies that operate in countries of the EU
Source: Authors' research based on CRANET data base

From Figure 4 it is seen that in organizations from the EU self – service options for managers, as online tools whereby managers can complete HR processes, exists only in 47% of all organizations. In case of employees this self – service options, as online tools whereby employees can access personal information and perform simple HR tasks such as maintaining personal data, exists in 36.6% of all organizations. Generally, e-HRM allows for "self-service" functions to be accomplished, either by the manager or the employee. Also, HRIS is used for

providing HR information and practices in 38.9% of companies from the EU. The use of self-service e-HRM in Europe is very common in Sweden, Belgium, Denmark, Finland, Germany and Italy, countries with the higher penetration of the internet.

CONCLUSION

HRIS as computerized tool for systematic procedure for managing data about human resources, personnel activities and organizational characteristics, accompanies with the internet technologies have several advantages for the organization. Benefits of integrated HRIS include improvement of administrative but also and strategic HR activities, increase of the effectiveness, reliability and accuracy of information, etc.

In this paper authors made the analysis of the usage of HRIS in organizations that operate in the European Union. According to the objectives of the research, we have derived several conclusions:

- Organizations from EU usually use HRIS as a single independent system (29.5% of total number of organizations) and separated stand alone tools (28.2%).
- HRIS is used mostly for administrative activities such as such as time registration and attendance (78.5%) and personnel records (81.9%). Also, HRIS is commonly used for compensations – 91.5% of organizations use IS for payroll and 65% for benefits.
- Organizations from the EU use self – service options for managers only in 47% of all organizations. In case of employees this self – service options exists in 36.6% of all organizations.

In general, IT technologies for HRM in companies from EU are used at the higher level compared to the findings from the past period. Due to the faster and wider development of the information technologies and rapid changes in that area more companies have the opportunity to use these kinds of systems.

At the end of the research on HRM information system it is necessary to point out that the success of the implementation HRIS depends primarily on people – whether employees understand the importance and benefits of these changes. Manager' task at all levels is the construction of such organizational culture that supports changes and it is open to the proper implementation of the new technology.

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