Electronic Human Resource Management (e-HRM): A New Concept for Digital Age

Nemanja Berber
University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
Biljana Đorđević
University of Niš, Faculty of Economics, Niš, Republic of Serbia
Sandra Milanović
University of Niš, Faculty of Economics, Niš, Republic of Serbia

Abstract

The digital age causes significant changes in the business environment. As one of the most important components of the modern business environment, technological environment and information technology (IT) influenced the development of many areas of business. The most notable changes are happening in the production of hardware and software, and industrial production, but also in the management where decision support systems have long been in use. Within the management, IT receives a special role in human resources management. Electronic Human Resource Management (e-HRM) is a concept which involves the use of Web-based technologies for providing the services regarding the human resource management in the organization, and to which access have a wider range of organization`s stakeholders - starting from the HRM department, via managers to employees. The aim of this paper is to highlight the importance of the concept of e-HRM, its most important features, advantages, potential drawbacks, as well as to show the level of usage of e-HRM in Serbia. The methodology of the paper includes theoretical analysis of the available literature and data on e-HRM and empirical analysis of data on the use of e-HRM in organizations in Serbia. The analysis was conducted on the database of Cranet research in 2015/2016 by using the SPSS software. The authors point out that e-HRM is a kind of innovation that promotes, develops and facilitates the practice of HRM, both for the department of human resourcesand for managers and employees.

Introduction

The last few decades have witnessed the intense and dynamic development of IT that deals with its impacts in various human resource jobs, starting with the way information and communication, and many daily activities.

The impact of IT development did not bypass the most of business entities that, thanks to the application of this technology and its innovative solutions, forever changed the way of performing different business activities. One of the areas that also did not remain "spared" new ways of performing activities and tasks is the HRM function in organizations. Thanks to the application of IT today, there is almost no single segment of the scope of operation of this function in which IT did not find its application and irreversibly changed the way in which many activities had been carried out by then. The activities that mostly "underwent" changes are the collection, keeping and updating of employees' data, then activities in the field of recruitment and selection of candidates, the manner of employee training, performance management, etc. Although the primary motive for the implementation of IT within the HRM function was to optimize procedures in carrying out the above activities, other positive effects such as cost reduction, better quality of services provided, productivity increase, etc., also emerged. It is therefore not

surprising that an increasing number of organizations use IT solutions within this function, as well as increasing the complexity of applications themselves in this field. It is important to emphasize that the primary task of this function has not changed. It remains the same, which is "to enable organizations to have an adequate number and structure of employees that will be available at the right time and in the right place at affordable costs and which will be motivated to achieve the organization's current and strategic goals" (Ma & Ye, 2015, p. 76). However, what has changed with the use of IT is the way this function accomplishes this task. By digitizing and automating administrative and transactional activities, it can do so in a more efficient way. At the same time, the application of IT within the HRM function enables employees to devote more time to those activities that create greater value for organizations, that is, the design of more effective policies in the HRM field that contribute to the improvement of organizational performance by which it (HRM) becomes the real strategic partner in business (Parry & Tyson, 2011). Basically, it can be said that the application of IT within the HRN is dual. First of all, this technology is used to connect spatially separated entities by enabling them to interact interactively with the performance of various HRM activities, irrespective of whether they are in the same room or on different continents. Additionally, IT enables the partial or complete substitution of human labor in performing various tasks in the field of HRM, which practically becomes a means of their execution (Slavić & Berber, 2013, p. 238).

The widespread use of IT in the realization of HRM activities has influenced the emergence of a new HRM concept. It is a concept that is known in academic literature as e-HRM, while in practice it is more often called e-HR (Foster, 2009). In any case, this is a concept that implies the use of IT to provide various services from the human resource management domain in an organization, and which approach has a wide range of stakeholders, starting with HRM department, through managers, employees, potential employees, and other stakeholders.

Considering the widespread use of IT for performing HRM activities, the aim of this paper is to point out the significance of e-HRM concept, its most important characteristics, advantages, potential shortcomings, and to explore the level of use of e-HRM in Serbia. The paper includes a theoretical analysis of available literature and data

on e-HRM, as well as an analysis of empirical data on the use of e-HRM in organizations in Serbia. The analysis was carried out on the database of the Cranet Research from 2015/2016, by using the SPPS software. The work itself is structured in a way that the introductory considerations, is followed by a review of the literature referring to e-HRM, while in the second part of the paper the explanation of the research methodology, the presentation of the research results, their discussion and concluding considerations are derived.

1. The review of the literature

In order to better understand the e-HRM concept, we will first give an overview of the meaning of another term commonly used, which is the Human Resource Information System (HRIS). When it comes to the Human Resources Information System, it implies systematic procedures for collecting, storing, maintaining, updating and distributing data on human resources of the organization (Tannenbaum, 1990), where the main user of this system is the HRM function (Ruel, Bondarouk & Looise, 2004). The goal of using this information system is to improve the performance of the HRM function by which it indirectly exerts a positive influence on the entire operation of the organization. On the other hand, when it comes to e-HRM, this concept refers to the application of strategies, policies and practices related to human resources in organizations with support or full reliance on web technology (Ruel, Bondarouk & Looise, 2004, p. 365) whereby this technology can be used by employees of HRM department, as well as other employees in the organization, potential employees, as well as the management of the organization (Bradić Martinović, 2011). Summarizing the difference between e-HRM and HRIS, Ruel and his associates (Ruel, Bondarouk & Looise, 2004) indicated that the HRIS includes systems that are only used by the HRM department, while the aim of e-HRM is primarily to serve to the other users, too.

Regarding the term e-HRM itself, its origin has been linked to the 1990s, with the idea of the emergence of e-commerce (Lengnick-Hall & Moritz, 2003). Thus, according to the reputation of e-commerce, the prefix "e" was used in HRM, which resulted in the name of the e-HRM concept (Ha, 2011, p. 20). However, when it comes to understanding the essence of the e-HRM concept, it is noticeable that there is still no single view.

This is explained by the fact that different authors put emphasis on different aspects of e-HRM. Thus, when explaining the essence of e-HRM, some authors place an emphasis on the transactional side of e-HRM, that is, the fact that HRM activities are more easily administered, other authors, place emphasis on technology that provides access to human resources data, while the third group of authors puts emphasis on the strategic aspect of e-HRM. When it comes to the first group of authors, some of them point out that e-HRM is such a concept in which it enables improvements in the administration of human resource activities and transactions (Kettley, & Reilly, 2003, p. 3). Similarly, Voermans and Van Veldhoven (2007, p. 887) point out that e-HRM represents administrative support for HRM by using internet technology. When it comes to the second group of perceptions, where the focus is on technology, it is stated that e-HRM implies the application of IT for networking or support between at least two individual or collective entities in their realization of HRM activities (Strohmeier, 2007, p. 20). Also, in this group of views, it is the belief that e-HRM represents the application of different types of technologies that enable managers and employees to have a direct access to human resources data and various administrative applications (Watson & Wyatt, 2002, p. 43). We also mention Bondarouk and Brewster (2016) that indicate that e-HRM focuses on all integration mechanisms and all the content of human resources management that is transmitted through IT, which aims to make the HRM processes more consistent, more efficient, with better quality, and which should create long-term opportunities for the stakeholders of the organization. Finally, when it comes to the third group of authors, it is indicated that e-HRM is, in fact, a comprehensive name that covers all possible mechanisms and interactions between HRM and IT aimed at creating value for employees and managers in the organization, as well as for entities outside of them (Bondarouk & Ruel 2009, p. 507).

However, if it were necessary to provide the simplest definition of e-HRM, then e-HRM represents cross-cutting and interrelation between HRM and IT, or the use of web technologies for the implementation of policies, practices, and procedures of HRM (Ruel, Bondarouk & Looise, 2004). E-HRM, in fact, consists of the configuration of computer hardware, software and electronic networks that enable the execution of HRM activities. At the same time, the degree of physical presence of hardware and software and the degree to which they are used to coordinate individual and group transactions in the HRM area, irrespective of the geographical constraints and organizational horizontal and vertical differentiation of users, determines the level of development of e-HRM in organizations (Marler,& Parry, 2016).

Since there are differences in understanding the role of e-HRM in organizations (but also in the level of applied hardware and software development), it is natural that there are differences in e-HRM levels. In this regard, Lepak and Snell (1998) consider that there are three levels of e-HRM: operational, relational and transformational. In the opinion of the above-mentioned authors, the operational e-HRM refers to the administration of data related to earnings of employees, as well as their personal data. Thanks to the application of IT in this domain, employees are able to update themselves on their own, or that may be done by HR staff. The goal of applying IT for these needs is to reduce costs and increase the efficiency of the HRM function or to have as many transactions as possible in the unit of time, especially when it comes to calculating earnings. Practice truly confirms that the introduction of e-HRM enables the increase in the efficiency of the HRM function through reduction of personnel in the human resources service, increasing the speed in the process realization, reducing costs and relieving staff from administrative tasks (Ruel, Bondarouk & Looise, 2004; Strohmeier, 2007; Bondarouk, Parry & Furtmueller, 2017; Micu, Capatina, Micu & Schin, 2017).

When it comes to relational e- HRM Lepak and Snell (1998), point to the IT support for business processes through its application in the field of employee training, recruitment of candidates, employee performance management, etc. Thus, for example, the application of IT in recruiting of candidates enables this activity to be performed by advertising of the need to fill a job position via an organization's website or through specialized sites. In addition, interested candidates can also apply by the IT and the Internet. An overview of other HRM activities in whichIT finds its application is given in Table 1.

Table 1 The application of IT in the implementation of basic human resource management activities

HRM activities	HRM tasks	Integrated IT support
Administrative support	Basic employee records(presence, absence, earnings, etc.).	Database management, attendance recording systems, registration.
HR planning	Statistical analysis of fluctuation, planning the need for labor force	Trend analysis, simulation models, etc.
Job analysis	Management of business description and specification data, analysis of organizational structure	Documentation of results of job analysis, visualization of existing and planned organizational structure
Recruitment	Process planning, documentation recruitment implementation	Creating, registering and managing data from advertisements, application forms, support for classical and on-line recruitment, use of social networks
Training and development	Research on the educational and developmental needs of employees, planning of training programs, organization of training, storage of teaching materials.	On-line questionnaires, analysis of development trends, data management, implementation of e-learning programs.
Individual performance management	Performance measurement	Documentation, analysis, feedback, trend analysis
Compensation	Creation of salary structure, salary modeling, level of compensation analysis	Analysis, calculation based on internal and external information

Source: Karoliny, M. & Poór, J., 2017, pp. 376-377.

Finally, when it comes to the third level of e-HRM, which Lepak and Snell (1998) designate as the transformational e-HRM, it is, in their opinion, related to the realization of activities in the HRM area that have a strategic importance for the organization which are knowledge management, employee development in accordance with the strategic goals of the organization, support to virtual teams, information exchange, etc. However, about the extent to which these activities will really have an impact on the formulation and implementation of the organization's strategy, there are different points of view. Some authors point out that e-HRM has not yet used its potential to raise the strategic importance of HRM function in the organization (Tansley, Newell,& Williams, 2001). On the other hand, there are points of view based on empirical research according to which e-HRM has enabled better integration of the HRM function with the organizational strategy (Ruel, Bondarouk & Looise, 2004). Finally, there is also research that has shown that e-HRM is more generally used for administrative purposes than for making strategic decisions, but that there are some organizations in which e-HRM provided a better quality of information on human resources than in the case of organizations which do not use e-HRM (Burbach & Dundon, 2005).

From the stated levels of implementation of e-HRM, the key objectives of introducing this concept are also derived. These are: increasing the efficiency of HR policies and procedures (Obeidat, 2016), increasing operational efficiency, improving the quality of services provided and increasing the strategic importance of the HRM function (Lepak & Snell, 1998). Parry and Tyson (2011, p. 336) added two more goals: empowering managers to carry out various activities from the HRM domain as well as standardization of procedures from this area. However, Armstrong (mentioned in Slavić & Berber, 2013, p. 239) has an even more detailed approach, which states that the implementation of the e-HRM concept enables the improvement of activities and processes from the HRM domain by achieving the following goals:

- improve quality of information available,
- reduce the administrative burden on the HR department,
- improve the speed at which information is available,
- improve the 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.

However, despite the indisputable advantages of implementing the e-HRM concept, certain potential shortcomings and challenges are also

present. A few of them stand out as key are (Kaur, 2013, p. 37):

- Illegal access and use of information: This is one of the main disadvantages of e-HRM because the data contained in the databases is available to anyone who can access them in a lawful or illegal manner and that these data can be used for different purposes. In other words, they can be "hacked", deleted, etc.
- Lack of appropriate staff: Although implementation of the e-HRM concept can be motivated by a reduction in the number of employees, there may be a lack of staff within the HRM function that possesses the appropriate technical KSAs necessary for the implementation and servicing of the e-HRM system, so there may be a need for their recruitment and related costs.
- Errors when entering data: In order to successfully operate the e-HRM system, it is necessary to avoid errors when programming this system, but also when using different applications. However, whenever the human error factor is concerned, they are not excluded.
- Interpersonal contacts are reduced: Since the implementation of the e-HRM concept mainly involves individual work, the number of employees' interpersonal contacts is reduced when performing work tasks, which in some of them can lead to the feelings of isolation.
- Inadequate use of the e-HRM capabilities due to the inflexible way of thinking of employees: In order to make full use of the benefits provided by the e-HRM concept, employees within the HRM function change the way they think, as many have proven to be certain about the use of modern technology as such, but also its possibilities. However, if transformations in the technology of carrying out work tasks are not accompanied by a transformation of the way of thinking and organizational culture, the introduction of the e-HRM concept can be transformed into a "financial fiasco".
- The threat to the function of HRM. Since the implementation of the e-HRM concept can lead to a surplus of employees in this function, the basic postulates on which the significance of this function is based, that is, the human resource is the most

important resource of an organization that enables the achievement of its goals and mission, will be demolished.

In the end, it should be emphasized that the mere introduction of the e-HRM concept is not without challenge, as any change, especially radical, and that it can cause more or less resistance. Since this concept has been in use for some time, it is possible to specify certain recommendations that would be useful to take into account during its implementation. Namely, before it is considered that a particular aspect of the e-HRM is being implemented, it is necessary to ensure the acceptance of change by employees and other stakeholders and ensure that the new processes in the implementation of HRM activities are aligned with the entire HRM system. In addition, it is necessary to train staff how to perform the previous activities in a new way using IT and appropriate applications. In all this, support and commitment of top management for all entities involved in the implementation of this concept is needed (Nivlouei, 2014, p. 153).

In order to investigate the level of the application of e-HRM in organizations in Serbia, the authors of the paper have explored empirical data. In the following part, we presented the methodology of the Cranet project and the results of the analysis.

2. Methodology

The research in this paper was based on the data of the Cranet research, the international network of business schools. This international network, coordinated by Cranfield School Management, organizes comparative research on human resource policy and practice using a standardized questionnaire. The research is carried out every four years (Steinmetz,Schwens, Wehner, & Kabst, 2011; Brewster, Mayrhofer, & Reichel, 2011) in over 40 countries of the world (Lazarova,Morley, & Tyson, 2008).

The aim of the research is to provide high-quality data for the academic, public and private sectors, as well as for human resource management students, and to create new knowledge about human resource management practice in different countries of the world. The questionnaire is translated into the language of the country in which the survey is conducted, thus achieving local adjustment and a clearer understanding of the issue. The standardized questionnaire used in the research is divided into

six parts: HRM activities in an organization, staffing practice, employee development, compensation and benefits, relationships with employees and communications, and organizational details (Leković, Slavić, & Berber, 2015; Slavić, Bjekić, & Berber, 2017).

As the only member of the international scientific network from Serbia, in 2008, for the first time, the Faculty of Economics in Subotica, University of Novi Sad, participated in an international study on human resources management activities with 50 analyzed organizations. In the first half of 2015, 160 organizations from the territory of Serbia were investigated. Answers to questionnaires were provided by executive managers or HR managers in organizations with more than 50 employees.

Table 2 Structure of organizations surveyed by a number of employees (N = 160)

Organization size (by number of employees)	Frequency	%
1-249	97	60.6
250-1000	42	26.3
1000+	21	13.1
Total	**160**	**100.0**

Source: Research of the authors based on the Cranet data for Serbia.

The data from Table 2 indicate that the largest share of analyzed organizations in Serbia in 2015 was in the group of small and medium enterprises (60.6% of organizations), according to the number of employees, from 1 to 250 workers. Large companies were around 27% (over 250 workers in the organization). Very large enterprises, over 1000 workers, made up 13% of the total sample.

Table 3 Ownership structure of organizations surveyed (N = 160)

Ownership	Frequency	%
Private	105	66
Public	54	34
Mixed	0	0
Other	0	0
Total	159	99.4
Missing	1	0.6
Total	**160**	**100**

Source: Research of the authors based on the Cranet data for Serbia.

The data from Table 3 indicate that the largest share of analyzed organizations in Serbia was in the private sector, 66%, while in the public there are 34% organizations.

About 45% of enterprises are engaged in production, while around 55% of organizations

are in the service sector. The largest share of organizations analyzed in 2015 in Serbia are from food, trade, telecommunications and IT sectors.

For the purposes of this research and pointing to the practice of using e-HRM in organizations, the following variables have been analyzed:

- Use of the e-HRM in an organization;
- Use of the self-service system for managers;
- Use of the self-service system for employees.

For the purpose of a more detailed analysis, the mentioned variables were placed in relation to the variables of the size, sector, and industry of the enterprise in order to determine the level of use and representation of these systems in organizations in the Republic of Serbia. Data analysis was done using the SPSS statistical program, by using descriptive statistics and the Spearman's Chi-Square test.

3. Results

Data from figure 1 shows the frequency of using e-HRM for the implementation of HRM activities. The data indicate that 58% of organizations in Serbia on a sample of 160 companies use this system to provide HR activities to their employees. 42% of organizations do not use e-HRM.

The module for self-service managers for performing various HRM activities is used by only ¼ of surveyed organizations (around 26%), while the vast majority of companies still do not have this opportunity for their managers. This system allows managers to access data on employees with whom specific managers cooperate, enabling them to perform certain HR activities (for example approving holiday requests, tracking the absence of employees, setting up and tracking the achievement of employee goals, approving costs, proposing employees for promotion, analyzing information about failures and abandonment of organizations, etc.).

The employee self-service module enables human resource professionals and employees to manage employee-based data. They can, if it is foreseen by the level of access to the system, have insight into all their data, and some data may change. Depending on the specific solution in the enterprise, access to data can be provided within the intranet, and then the security of the system is

higher, but also via the internet, in which case the availability of data is greater (Bradić-Martinović, 2011, p. 187). According to Figure 1, it is evident that around 1/5 of the analyzed organizations use

this module, or more precisely 18.4%. The largest percentage of organizations from Serbia does not offer the possibility of independent access of employees to the data on staff.
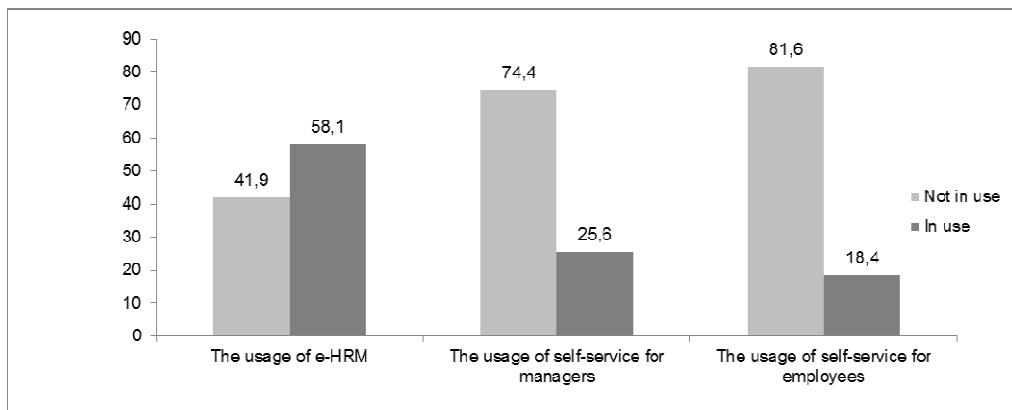
Figure 1   Representation of e-MLP in organizations in Serbia (%)
Source: Research of the authors based on the Cranet data for Serbia.

Since the e-HRM usage frequencies are shown and the self-access module for HR data for managers and employees, in the following part of the text data on the mentioned variables are attached to the HRM strategy, HR department, and business strategy, as a determinant of the strategic approach to HRM.

According to the data in Table 4, it is evident that if organizations have HR departments, then e-HRM, self-service for managers and employees modules will be represented in a larger part of organizations.

Table 4   Use of E-HRM, self-service for managers and employees in relation to the existence of HRM department

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	68.2	31.8	100.0	χ^2=17.256 p=0.000	Phi=0,328 p=0,000
	Yes	31.9	**68.1**	100.0		
Total		41.9	58.1	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	93.2	6.8	100.0	χ^2=11.263 p=0.001	Phi=0,265 p=0,001
	Yes	67.2	**32.8**	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	97.7	2.3	100.0	χ^2=10.129 p=0.001	Phi=0,253 p=0,001
	Yes	75.7	**24.3**	100.0		
Total		81.7	18.4	100.0		

Source: Research of the authors based on the Cranet data for Serbia

In the case of e-HRM, data indicate that if there is an HR unit in the organization, then 68% of organizations will use e-HRM (2 = 17,256; p = 0,000). The strength of this relationship is expressed by the coefficient Phi = 0.328 (p = 0.000), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of using independent access for managers, the data indicate that if there

is an HR department in the organization, about 33% of organizations will use the mentioned module (2 = 11,263; p = 0.001). The strength of this relationship is expressed by the coefficient Phi = 0.265 (p = 0.001), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of autonomous access to the employee's system, it is evident that if there is a

department for HRM in the organization, then 24.3% of organizations will also use an independent approach to employee data ($x^2 = 10.129$; p = 0.001). The strength of this relationship is expressed by the coefficient Phi = 0.253 (p = 0.001), which indicates that this is a weak, statistically significant link between the observed binary variables.

Table 5 Use of E-HRM, self-service for managers and employees in relation to the existence of HR strategy in an organization

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	62.7	37.3	100.0	x^2=20,512 p=0,000	Phi=0,358 p=0,000
	Yes	26.9	**73.1**	100.0		
Total		41.9	58.1	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	89.6	10.4	100.0	x^2=13,923 p=0,000	Phi=0,295 p=0,000
	Yes	63.4	**36.6**	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	93.8	6.2	100.0	x^2=10,969 p=0,001	Phi=0,263 p=0,001
	Yes	73.1	**26.9**	100.0		
Total		81.7	18.4	100.0		

Source: Research of the authors based on the Cranet data for Serbia

According to the data in Table 5, it can be concluded that if organizations have a human resource management strategy, e-HRM, independent access for managers and employees to the data on employees will be included in a larger share of organizations.

In the case of e-HRM use, data indicate that if organizations have a specific HRM strategy, then 73% of organizations will use e-HRM (χ^2 = 20,512; p = 0,000). The strength of this relationship is expressed by the coefficient Phi = 0.358 (p = 0.000), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of self-service for managers, the data indicate that if there is an HR strategy in the organization, about 37% of organizations will use the mentioned module

(χ^2 = 13,923; p = 0,000). The strength of this relationship is expressed by the coefficient Phi = 0.295 (p = 0.000), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of self-service for employees, it is evident that if there is a strategy for HRM in the organization, then 27% of organizations will also use an independent approach for an employee to use staff data (χ^2 = 10,969; p = 0.001). The strength of this relationship is expressed by the coefficient Phi = 0.263 (p = 0.001), which indicates that this is a weak, statistically significant link between the observed binary variables.

Table 6 Use of E-HRM, self-service for managers and employees in relation to the existence of business strategy in an organization

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of business strategy (%)	No	80.0	20.0	100.0	x^2=13,451 p=0,000	Phi=0,291 p=0,000
	Yes	36.7	**63.3**	100.0		
Total		41.9	57.9	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of business strategy (%)	No	95.0	5.0	100.0	x^2=4,937 p=0,026	Phi=0,176 p=0,026
	Yes	71.9	**28.1**	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			

Existence of business strategy (%)	No	100.0	0.0	100.0	χ^2=4,897	Phi=0,177
	Yes	79.0	**21.0**	100.0	p=0,027	p=0,027
Total		81.7	18.5	100.0		

Source: Research of the authors based on the Cranet data for Serbia

According to the data from Table 6, it is evident that if organizations do not have a business strategy, then in e-HRM, an independent approach to the data on employees for managers and employees will be represented in a smaller share of organizations.

In the case of using e-HRM, the data indicate that if there is a business strategy in the organization, then 63.3% of organizations will use e-HRM(χ^2 = 13.541; p = 0.000). The strength of this relationship is expressed by the coefficient Phi = 0,291 (p = 0,000), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of the use of self-service for managers, the data indicate that if there is a business strategy for the organization, about 28% of the organizations will use the mentioned module (χ^2= 4,937; p = 0.026). The strength of this relationship is expressed by the coefficient Phi = 0.176 (p = 0.026), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of the self-service system for employees, it is evident that if there is a business strategy in the organization, then 21% of organizations will also use an independent approach to employee data on employees (χ^2 = 4.897; p = 0.027). The strength of this relationship is expressed by the coefficient Phi = 0.177 (p = 0.027), which indicates that this is a weak, statistically significant link between the observed binary variables.

Conclusion

Over time, the role and importance of the HR function have changed in a way that changed the attitude towards the human capital, but also in a way how technological changes occurred, since it always provides a framework for structuring business processes and activities. More recently, this feature gets a very powerful ally for its development in the form of IT and electronic systems. Namely, owing to the IT and electronic systems transactional, daily, HR activities such as monitoring and attendance records, absences, sick leave, annual leave, salary payments, benefits, stimulation, training, tracking achievement of goals, duration of employment and completion of

work contract of employees, the planning of necessary workers in relation to the dynamics of the work of the organization, etc., are carried out faster, more accurately, and easier than before. At the same time, through this connection between IT and HRM, the new HRM concept was developed and named e-HRM. Taking into account its increasingly widespread application and importance, both for carrying out daily transaction activities in the HR domain, as well as for strategic management of human capital in the organization, the paper dealt with the basic characteristics of this concept, its advantages, and potential challenges.

The paper points out that the key advantages of such a system are the faster, more accurate and easier processing of information about employees, cost savings, the release of HR managers from administrative tasks, increased access to HR data, standardization of HR processes within the company, more consistent and up-to-date data on employees and their performance, and the like. In short, using the e-HRM concept, this function is able to achieve a significant positive impact on the entire operation of the organization, as its application increases the efficiency and effectiveness of its work.

Although the benefits of implementing the e-HRM concept are significant, as confirmed by the research presented in this paper, e-HRM has several shortcomings, which are also indicated. These disadvantages are mainly attributed to the system's inflexibility, the accuracy of the data entered, the confidentiality of information and legal issues, such as system abuse and internet networks during working hours. It is necessary to pay attention to all these potential hazards, since e-HRM should primarily facilitate and speed up the HR process, rather than slowing it down and caving.

The paper also presents the results of an analysis of the data on the use of the e-HRM system in organizations in the Republic of Serbia. The data showed that in Serbia, only half of the organizations, out of 160 respondents, use such systems. In the case of the use of the system/module for self-servicefor managers and employees, this percentage of organizations is

even smaller, only ¼ organizations in terms of managers, and 1/5 when it comes to other employees. When considering the use of e-HRM in relation to the existence of HR department, HR strategies and business strategies in the organization, in all cases, organizations use e-HRM and modules for independent data access to a greater extent when possessing mentioned elements. This tells us that the development of the HRM process, viewed from a strategic angle, contributes to the understanding, implementation and the use of modern technological achievements in this field.

The practical implication of this paper is reflected in the presentation of the most important e-HRM opinions, highlighting the benefits, but also the constraints that managers need to know and analyze if they decide on the introduction of e-HRM. Also, as the HR process is an integral part of the wider business process, it is important to know all the implications of the e-HRM application. Introducing organizations with e-HRM capabilities allow for a more secure and successful implementation of such a system, which can lead to different benefits, which have already been mentioned several times in the work. E-HRM is especially important for organizations in Serbia since only about half of the organizations use it. The introduction of such a system could lead to cost savings and greater efficiency in HR departments and other business processes. Also, since e-HRM allows for less time spent on administrative activities, HR experts could pay more attention to strategic outcomes in HR, which would significantly strengthen the position and importance of the HR function in organizations. This is particularly important if we have in mind that all developed economies of the world and successful organizations are based on the assumption that employees, as human capital, are one of the main factors of success and a sustainable competitive position in modern business.

References

Bondarouk, T., Parry, E., & Furtmueller, E. (2017). Electronic HRM: four decades of research on adoption and consequences. *The International Journal of Human Resource Management, 28* (1), 98-131.

Bondarouk, T., & Brewster, C. (2016). Conceptualising the future of HRM and technology research. *The International Journal of Human Resource Management, 27* (21), 2652-2671.

Bondarouk, T., & Ruel, H. (2009). Electronic Human Resource Management: Challenges in the digital era.

The International Journal of Human Resource Management, 20 (3), 505-514.

Bradić Martinović, A. (2011). *Značaj implementacije HRIS-a u savremenoj ekonomiji.* U: J. Zubović, (Ed.) Aktivne mere na tržištu rada i pitanja zaposlenosti (pp. 177-198). Beograd: Institut ekonomskih nauka.

Brewster, C., Mayrhofer, W., & Reichel, A. (2011). Riding the tiger? Going along with Cranet for two decades—A relational perspective. *Human Resource Management Review, 21* (1), 5-15.

Burbach, R., & Dundon, T. (2005). The strategic potential of human resource information systems: evidence from the Republic of Ireland. *International Employment Relations Review, 11* (1/2), 97-117.

Foster, S. (2009). *Making Sense of e-HRM: Transformation, Technology and Power Relations.* In: T. Bondarouk, H. Ruël, K. Guiderdoni-Jourdain, & E. Oiry (Eds), Handbook of Research on E-Transformation and Human Resources Management Technologies: Organizational Outcomes and Challenges (pp. 1-19). Hershey: Information Science Reference.

Ha, N. T. V. (2011). *The Impact of E-HRM On the Roles and Competencies of HR.* Unpublished Master's Thesis in Management International Business. University of Vaasa, Faulty of Business Studies Department of Management. Retrieved March, 17, 2018 from: https://www.tritonia.fi/download/gradu/4282

Karoliny, M. & Poór, J. (2017). *Emberi erőforrás kézikönyv – Rendszerek és alkalmazások.* Budapest: Wolters Kluwer.

Kaur, P. (2013). E-HRM: A Boon or Bane? Anveshanam - *A National Journal of Management, 1* (1), 35-38.

Kettley, P., & Reilly, P. (2003). *An introduction to e-HR.* Brighton: Institute of Employment Studies.

Lazarova, M., Morley, M., & Tyson, S. (2008). International comparative studies in HRM and performance–the Cranet data: Introduction. *The International Journal of Human Resource Management, 19* (11), 1995-2003.

Leković, B., Slavić, A., & Berber, N. (2015). *Praksa upravljanja ljudskim resursima u Srbiji 2014/2015 – Izveštaj Cranet istraživanja.* Subotica: Ekonomski fakultet.

Lengnick-Hall, M. L., & Moritz, S. (2003). The Impact of e-HR on the Human Resource Management Function. *Journal of Labour Research, 24* (3), 365-379.

Lepak, D. P., & Snell, S. A. (1998). Virtual HR: Strategic human resource management in the 21st century. *Human Resource Management Review, 8* (3), 215-234.

Ma, L., & Ye, M. (2015). The Role of Electronic Human Resource Management in Contemporary Human Resource Management. *Open Journal of Social Sciences, 3* (4), 71-78.

Marler, J. H., & Parry, E. (2016). Human resource management, strategic involvement, and e-HRM technology. *The International Journal of Human Resource Management, 27* (19), 2233-2253.

Micu, A., Capatina, A., Micu, A. E., & Schin, G. (2017). Exploring e-HCM Systems' Benefits in Organizations from Private Sector and Public Administration. *Journal of Promotion Management, 23* (3), 1-12.

Nivlouei, F. B. (2014). Electronic Human Resource Management System: The Main Element in Capacitating Globalization Paradigm. *International Journal of Business and Social Science, 5* (2), 147-159.

Obeidat, S. M. (2016). The link between e-HRM use and HRM effectiveness: an empirical study. *Personnel Review, 45* (6), 1281-1301.

Parry, E. & Tyson, S. (2011). Desired goals and actual outcomes of e-HRM. *Human Resource Management Journal, 21* (3), 335-354.

Ruel, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation. An explorative empirical study in five large companies in web-based HRM. *Management Review, 15* (4), 364-379.

Slavić, A., & Berber, N. (2013). *The Role of Human Resource Information Systems in EU based on CRANET research*. International Conference International Conference on Applied Internet and Information Technologies ICAIIT (pp. 238-243). Zrenjanin: University of Novi Sad, Technical Faculty "Mihajlo Pupin".

Steinmetz, H., Schwens, C., Wehner, M., & Kabst, R. (2011). Conceptual and methodological issues in comparative HRM research: The Cranet project as an example. *Human Resource Management Review, 21* (1), 16-26.

Strohmeier, S. (2007). Research in e-HRM: Review and implications. *Human Resource Management Review, 17* (1), 19-37.

Tannenbaum, S. I. (1990). HRIS: User Group Implications. *Journal of Systems Management, 41* (1), 27-32.

Tansley, C., Newell, S., & Williams, H. (2001). Effecting HRM-style practices through an integrated human resource information system. *Personnel Review, 30* (3), 351-370.

Voermans, M., & Van Veldhoven, M. (2007). Attitude towards e-HRM: An empirical study at Philips. *Personnel Review, 36* (6), 887-902.

✉**Correspondence**

Nemanja Berber

Faculty of Economics in Subotica
Segedinski put 9-11, 24000, Subotica, Serbia

E-mail: berber@ef.uns.ac.rs