UTILIZATION OF IT IN HUMAN RESOURCES MANAGEMENT

Aneta Karasek
Maria Curie-Sklodowska University, Poland
aneta.karasek@umcs.pl

Abstract:
Nowadays increasing role of information technologies and strategic role of human resources management have influence on enterprises. Moreover rapid development of information technologies affects the process of human resources management in enterprises. The aim of the paper is the analysis of utilization of IT in human resources management in high-tech enterprises in the USA. These practices will be presented in following areas: recruitment and selection, development and training, performance management, motivation, talent management, employee self-service systems. There will be also presented results of studies on the utilization of IT tools in HRM conducted in Polish enterprises. Results of conducted survey shows increasing utilization and variety of IT solutions in all surveyed areas in high-tech enterprises in the USA what caused the crucial influence of HRM process. The level of IT tool implementation in HRM processes taking place in Polish enterprises is low, which, according to enterprises, results from the lack of funds for implementation of this type of solutions. In the future enterprises are planning further implementation due to drawn advantages, consolidate individual HRM processes and implement cloud-based solutions.

Keywords: human resources management, information technology, e-HR, HRM practices

1. BACKGROUND

21. century has seen a rapid growth of information technologies in nearly all aspects of human activity and growth of the Internet users which was less than 1% of world population in 1995 and more than 40% in the middle of 2014 (Internet World Stats 2015). IT solutions can be widely applied in company management as in the crisis environment enterprises search for different kinds of competitive advantage and for possibilities of boosting their effectiveness. Information technologies and Internet has given enterprises more possibilities for cooperation, communication and for being responsive to the changing needs of the workforce, and they also have had its impact on decision-making processes taking place in enterprises. Implementation of technologies has ceased to provide support and, to an increasingly growing extent, it has become a company strategy (Rakowska & Pastuszak 2014, p. 331).

Application of information technologies provides for possible increase in enterprise efficiency through more effective use of available resources, and in particular human resources in the company. Increased use of information technologies in human resource management is also influenced by market competition, very common use of technology in all life areas owing to the so called external network effects (popularization effect). A study by R. Kmieciak, A. Michna and A. Męczyńska (2012) confirm existence of positive correlation between the use of IT tools in internal communication and conditions for innovation and innovation activity. What is more, people have increasingly used IT solutions, including mobile solutions, which give possibility for more flexible human resource management, as it helped organizations to modify work arrangements so that work can be performed from many locations (e.g. office, home) at virtually any time of day or night (e.g. telecommuting).

The aim of this paper is to analyze the use of information technologies in human resources management in high tech enterprises. These practices will be presented in the following areas: recruitment and selection, development and training, performance management, motivation, talent management, employee self-service systems. IT solutions applied in HRM will be analyzed for high-tech enterprises dealing with advanced technical solutions, therefore special care should be extended over their employees. High-tech enterprises have to keep extending care over acquisition and development of employee competencies as their employees must quickly and effectively search for new solutions and improve their productivity.

The research problem is highly important in view of the growing significance of information technologies in human resource management. What is more, dynamic growth of information technologies impacts processes taking place in an enterprise, and human resource management plays a strategic role in company managing.

2. INFLUENCE OF INFORMATION TECHNOLOGIES ON HUMAN RESOURCES PROCESSES

In the last decade, information technologies has transferred management of human resources process mainly in terms of collecting, storing, gaining and utilization of information. Attention should be paid to the direction of the latest development of IT solutions used in HRM, which is presented in figure 1.

Figure 1: History of HR solutions in enterprises.
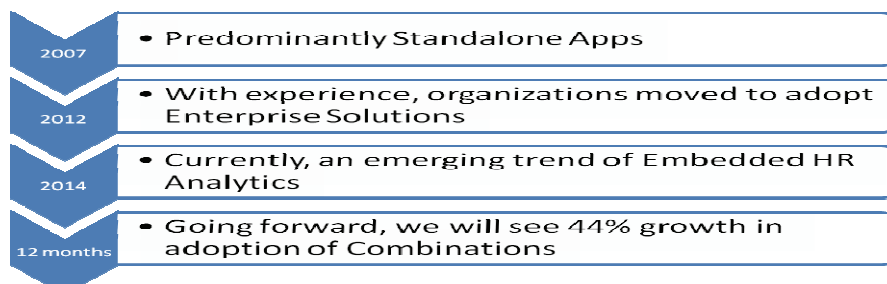
Source: author's own study based on: Sierra-Cedar, 2014-2015, p. 54.

According to S. Strohmeier (2007, p.20) 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 performance of HR activities.

Attention should be paid to the fact that technology is necessary to connect various actors working in the same room, as well as those working on different continents, and to enable them to interact, as this gives them the possibility to connect and integrate. What is more, IT solutions may subsidize performance of some HR activities due to systematic way of applying information. e-HR is a multi-level phenomenon where significant role is played by both individual actors, professional groups, organizational units as well as the entire organization, and the general purpose is cooperation for purposes of performing HR activities. There is a growing body of research into the take-up of e-HR applications, there is a dearth of investigation into the impact of e-HR on the people involved; in particular, the (re)structuring of social relations between HR functions and line managers in the move away from face-to-face HR support services, to more technology-mediated 'self-service' relationships (H.Francis, C.Parkes, M.Reddington 2014, p.1327).

Since 1997, CedarCrestone (now, Sierra-Cedar) has conducted studies on IT application in HRM, which point to either the most hard-dollar cost savings or strategic benefits. Furthermore, these studies indicate that it is not only technology that contributes value, but also the related practices, such as, e.g.: the business process, data standardization, degree of customization, adoption of integrated HRMS, talent management, moving to shared services, process maturity, and level of best practice adoption. Study findings showed that those with highest levels in all of the above, had higher financial results.

In 2007 when The *Sierra-Cedar HR Systems Survey* began to track workforce analytics early adopters experimented with standalone applications, but executives would like to receive more data from across the enterprise to see the employees contribution to the enterprise. Organizations developed new solutions which integrated data from many areas of enterprise and adopted enterprise solutions. Nowadays, organizations have possibility to use cloud solutions and more embedded HR analytics solutions.

3. INFORMATION TECHNOLOGIES IN HUMAN RESOURCES MANAGEMENT

IT solutions used in human resource management may be integrated or refer to a single HR function. A growing number of enterprises has used IT tools in their recruitment process and employee management, which provides for administrative savings and cost reduction of 33% of higher revenue growth (CedarCrestone report 2012-2013 HR Systems Survey). Enterprises begin to be characterised by the use of IT tools, which is confirmed by study results according to which 50% of medium and large enterprises are planning to increase spending on technology in HRM in the next 12 months (CedarCrestone report 2012-2013 HR Systems Survey). Studies showed that economic slump triggers searching for new ways of using available human resources.

The Sierra-Cedar research shows that some of the organisation have a clear strategy for choosing and implementing their HR systems, however some of them exhibit on organic-growth model based on immediate needs and funds.

Research made in USA among 1063 unique organizations present in The Sierra-Cedar Human Capital Management (HCM) Application Blueprint shows level of adoption of following solutions (CedarCrestone 2013-2014, p. 9). The most popular solutions implemented in organizations is self service and administrative apps which was adopted in 92% of surveyed organizations, what is shown in Table 1.

Table 1: Adoption of HR solutions.

HR Solutions		Adoption (in %)
Service delivery	HP Help Desk, Portal, Workforce Lifecycle Management (Onboarding)	49 %
Self service/ Direct Access	Employee Self Service, Manager Self Service	92 %
Administrative Apps	Core HRMS, Roles/Competenies (Profile Mgt.), Payroll, Benefit Admin, Embedded HR Analytics, Embedded HR Social	92%
Workforce Management	Time&Labour, Absence&Leave Management, Labour Scheduling, Labour Budgeting, WFM Analytics, Social	46%
Work Optimization	Workforce Planning, Workforce Analytics, Predictive Analystics	12%
Talent Management	Recruting, Performance, Learning, Compensation, Succession, Career, Talent Profile, Talent Analystics, Social	55%
Business Intelligence Foundation	Reporting/visualization and BI tools	41%

Source: Sierra-Cedar 2014-2015, p.9.

The paper will present IT solutions for specific HR functions such as: recruitment and selection, development and training, employee assessment, motivation, talent management, personnel service.

3.1. Recruitment and selection

The recruitment process in an enterprise is intended to provide the organization with the highest number of candidates who will the best meet their demands concerning knowledge, skills, ability and other attributes (hereinafter, KSAO). Currently, organizations have increasingly used Internet to advertise job openings and attract qualified prospects. What is more, company websites not only inform about job vacancies and present job descriptions, but they also provide details concerning organizational culture, development opportunities, promotion prospects offered to its employees. Currently, a common practice has been to publish recruitment ads on the Internet; a study by G. N. Howardson, and T.S.Behrend (Science Duirect 2015) showed that for job seekers both, objective technological characteristics and usability expectations, relate to perceptions of attractiveness indirectly through post-use trust in acceptance of technology.

A new trend on the other hand, is social recruiting which may include using social sites such as LinkedIn and corporate-branded social media for passive and active recruiting. According to the study by Sierra-Cedar (2014-15, p. 59) social-enabled recruiting process continues to develop and in 2014 the recruiting/talent acquisition staff was 67%, whereas recruiting (hiring managers) was 26%. In their opinion, this provides an opportunity for: using enterprise solutions in communicating with candidates, performing social network analyses against the social network data, developing records of potential hires, and analyzing the prospects for their potential as effective new hires.

Selection, on the other hand, is focused on choosing from among the enrolled candidates the one who will meet requirements set before a potential employee and who will contribute to organizational goals and objectives through their job performance. In recent years, along with development of information technologies there have appeared a lot of new tools that are used in the recruitment and selection processes and which save time and money.

In the e-selection process, the following tools have been used (2014-2015, p. 59):
- Electronic Job Analysis (EJA) which provides highly updated information about jobs, and makes it much easier and faster to collect the basic job data than it is the case with traditional job analysis methods. EJA changes the selection process in many ways, because analysts can use Internet or intranet systems to send questionnaires worldwide.

- electronic job application and initial screening. Normally organizations ask applicants to complete an application form and/or submit a resume. Right now organizations ask candidates either to complete application blanks online or upload resume to enterprise websites.
- electronic tests and assessments. This solution is much more demanding than papers tests because applicant must attend to two tasks: complete test and manage the computer system.
- electronic interviews. The results of research shows that the type of technology used (e.g.videoconference) may influence on the effectiveness and applicant acceptance of electronic interview systems (Bauer & Truxillo & Paronto & Weekley & Campion 2004, 135–148.).
- decision-making based on e-selection, which can be based on combinating predictor scores or composite scores.
- evaluation of e-selection systems, which can be used to evaluate system effectiveness or access the validity of predictors.

One of the solutions used by high-tech enterprises such as SalesRoads (1028 rank among America's fastest-growing private companies in USA) or Suite-Apps is ZOHO Recruit. This application is an easy-to-use Applicant Tracking System (ATS) which helps recruiting departments and staffing agencies to track job opening, resume and contact candidates. Moreover, it integrates the entire recruitment process starting from requisition submittal to posting the job in the website, scheduling interviews and tracking candidates progress based on the hiring process. ZOHO Recruit give possibility to filter the candidates based on your organization needs, without missing a talent, gather the resume database, schedule interviews, create and publish job openings in the website using the Zoho Recruit tools. ZOHO Recruit is also avilable on Google Apps and is connected with social media like LinkedIn (Zoho 2015).

3.2. Development and training

Employee development and training activities are aimed at preparing employees – in the period of their employment in the organization – to perform work and occupy job position with higher responsibility. Currently, in order to increase effectiveness and quality of employee development activities, a broad spectrum of IT solutions has been used. Organizations are using various forms of technology to deliver training to employees (e.g., the Internet, intranet systems, video conferencing, online simulations (Salas & DeRouin & Littrell 2005, pp.104-137).

One of the commonly used solutions in this area is e-learning, extensively applied in education and training due to possible participant access to trainings, courses or studies from work, home or any other location in the world. Currently, e-learning courses are offered by the majority of higher education institutions, including highly prestigious Stanford University, Massachusetts Institute of Technology (MIT) or Harvard University. Advantages of using the e-learning method include: flexibility for the learner, materials supporting different learning styles, possible communication between learners and tutors or easy access to the materials.

R.A. Noe (2005) has identified six levels of technology-based training, which include: communications, online referencing, testing assessment, delivery of computer-based training and multimedia, blended learning and electronic performance support systems. However, on-the-job training is positively associated with the maturity of information and communications technology (.Kottemann & Boyer-Wright 2009, p. 32).

Employees of high-tech enterprises have to learn fast and effectively to solve problems and increase their productivity, therefore using information technologies in their development and training is a common practice. Attention should be paid however, to the costs of such a system and employee acceptance of e-learning systems (extended technology acceptance model) composed of the locus of control, computer self-efficacy and technology acceptance model. Studies conducted on high-tech companies in Taiwan (Jung-Wen Hsia & Ch. Chia-Chi & Ai-Hua 2014) showed that computer self-efficacy had significant direct effects on perceived ease of use and behavioural intention to use. In general, analysis results provide strong support for using the extended TAM to explain user acceptance of e-learning systems.

Solutions applied by high-tech companies include:
Engaging social community around learning and training events to make them dynamic. Enabling learners to interact and communicate before, during, and after the event. Providing social-based mentoring that may be informal, ad hoc, or on-the-job. Leveraging social tools such as tagging, bookmarking, and rating learning content, courses, and instructors (Sierra-Cedar, 2014-2015, p. 58).

3.3. Performance management

Enterprises use technology solutions in performance management because they believe that technology will streamline the performance evaluation process, cut costs, and decrease the time and effort needed to manage employee performance (Bartram 2004, p.237-259). There are many advantages of utilization IT solutions including enhanced efficiency, time savings, frequency of feedback, and increased focus on employee development (Spitzer 2007). Moreover, 360 degree feedback might be done with utilization of internal social media to gather feedback from group members as well as customers. The most popular software for performance management is SuccessFactors (22% market share) (Sierra-Cedar, 2014-2015, p. 50) which is used by SAP, TeliaSonera, BARCO,Fishbowl, Outoteck. Moreover, 31% of organizations (*ibid p. 50*) was thinking about changing their Integrated Talent Management suite, so applications are the most likely to be part of a Talent Management suite. This applications give possibility to align goals for employees and managers, calibrate performance, support managers to provide feedback, coaching and deliver relevant formal reviews. Utilization of PeopleFluent Performance Management Software (18% market share) among high-tech enterprises is popular. It gives such tools as goal management, performance appraisals, competency and skill assessment, talent profiles, development activities, mobile performance management, reporting and analytics, and multi-rater / 360 review functionality (People Fluent 2015).

3.4. Motivation

Motivating employees of high-tech enterprises is of key importance in building their engagement and increasing innovation, therefore traditional ways are supported by the latest IT-based methods. Gamification is a new strategy designed to build a strong and long-lasting employee engagement, using gaming mechanics from computer, video and mobile games for positive user change (gaming mechanics: collecting credits, prizes, badges). The goal of gamification is to motivate people to change behaviors or develop skills, or to drive innovation. Competition is one the most effective ways of achieving business goals, an incentive scheme supporting successful ending of projects. Gamification is of considerable importance in sales, as the incentive scheme involving prizes makes employees more determined to achieve the set goals, that is sales of products or services. Gartner is redefining gamification as "the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals" (Blogs Gartner 2015). Deloitte has an efficient training system with an online training platform, but weren't seeing the numbers or results they wanted. They decided to gamify the system, adding an incentives program and public leaderboards which caused that their Leadership Academy program saw regular weekly users increase by more than 30% (Technology advice 2015). Microsoft, Samsung, ORACLE have selected Badgeville's Behavior Platform to power their customer loyalty, employee productivity and product enhancement programs. Badgeville gamification is not only points, badges, and leaderboards, but also help business leaders achieve real business benefits with gamification that contribute to their bottom line (Badgeville 2015).

According to the study by Sierra-Cedar, 34% of organizations say they are using some form of Gamification in their HR processes today. The top uses for those using Gamification in HR include Wellness programs (67%), Employee Surveys (49%), Incentives (48%) and Social Responsibility (47%). This is the only Emerging Technology that we are tracking today with sizable usage, and we recommend that HR and IT keep an eye on this trend as a new generation with high expectations for engagement enters the workforce (Sierra-Cedar, 2014-2015, p. 64). Gartner points out that in the coming years, gamification will continue to develop, the real efficacy of which will serve as a tool to motivate and engage employees and customers.

3.5. Talent management

Talents are fought for before our eyes, and companies have used more and more sophisticated talent management tools. What is more, a variety of talent management software tools can help companies

tackle questions related to job burnout and disengagement. Used apps help encourage managers and workers to set goals, and making career plans can help rekindle employee commitment. Talent management software refers to tools for key HR tasks such as recruiting, performance management, succession planning and compensation management. These apps enable employees to easily connect employee goals to the broader organizational objectives – an ability referred to as "cascading goals". Moreover, apps provided by talent management vendors allow workers to update their own employee profiles, which offers opportunities for internal searching for the latest skills and accomplishments of employees in a company.

Talent management software tools cannot be separated from other resource management activities, and solutions available on the market are diversified. As found in the study by Sierra-Cedar 2014-2015 HR Systems Survey, in 2014 31% out of 1,063 examined companies planned to change their Integrated Talent Management (ITM) solutions in the next 12 month, majority to SaaS deployment models. For several years, ITM deployments have been predominantly SaaS; today, only 44% of organizations use a SaaS solution. In the next 12 months, 59% of respondents plan to adopt a SaaS ITM. This is in part due to the major pressure exerted by vendors-on-premise to move existing clients to their new Cloud solutions. Sierra-Cedar (2014-2015, p. 64) reports that 62% of respondents who are changing their ITM suite are consolidating Talent Management applications onto their current or future planned HRMS vendor solution and eliminating point solutions.

Sierra-Cedar study found that Oracle (PeopleSoft and EBS) have the largest market share (25%), and forecasts for the next 12 months indicate the largest market share by SuccessFactors and Plateau (19%). SuccessFactors provides a complete, recruit-to-retire solution across all talent processes, and comprehensive content such as skills and competency libraries, job descriptions, goal catalogs, as well as legal and coaching content. Moreover, this platform connect the process to all the other talent processes, such as learning (formal and informal), goal setting, recruiting and core HR. Instead of being another isolated HR program, on boarding becomes the center of the talent strategy, empowering new hires to ramp up quickly and contribute to corporate goals sooner (Success factors 2015). This solution is used by such high-tech companies as: Ericsson, SAP, Barco.

In line with the forecasts of "The Global Talent Management Software 2014-2018" (Research and Markets. 2015). Compound Annual Growth Rate (CAGR) will grow by 17.59% between 2013-2018. Talent management development will use cloud computing technology, whereas organizations operations are globally planning to put their talent management on their HRMS platform.

3.6. Employee self-service systems

Flexible human resources management and cost efficiency of HR department encourage high-tech enterprises to implement employee self-service (ESS) systems what caused that is the most popular single form of e-HR (Gueutal & Falbe 2005). This type of system give employees access to centralized HR datebase which allows o review personnel data, enroll in benefits, participate in open enrollment, sign up for training and prepare application for leave. Organizations to improve communication with employees implement Service Delivery Applications, which could contain Employee and Manager Self Service and HR Help Desk solutions including Employee/Manager Portals and Workforce Lifecycle Management solutions such as onboarding workflows. Research made by Sierra-Cedar shows that employee self service was adopted in 74% of surveyed organizations and those organizations that have a higher percentage of self-service user adoption serve 10% more employees than those without those technologies with their HR administrative headcount. There are many examples of successful utilization of employee self-service systems in high-tech companies, in example Dell Computer Corporation implemented a fully web-native self-service system what caused in the first year $ 2,5 milion savings.

4. UTILIZATION OF INFORMATION TECHNOLOGIES IN HUMAN RESOURCES MANAGEMENT IN INNOVATIVE ENTERPRISES IN POLAND

The review of worldwide studies points to extensive use of IT tools in human resource management. In order to assess prevalence of these solutions in Poland, a study including innovative enterprises which in the years 2010-2012 implemented at least one innovation related to products, processes, organization or marketing, was conducted. Participants of the 2013 study included 81 small, medium

and large innovative enterprises from across Poland. The study had a form of a questionnaire given to individuals responsible for human resource management or general management of the company.

The study showed that percentage of enterprises using IT tools in the recruitment and selection process is low, and the analysis of the level of using specific tools is diversified, which is presented in Figure 2.

Figure 2: IT solutions used in the process of recruitment and selection (% of companies).
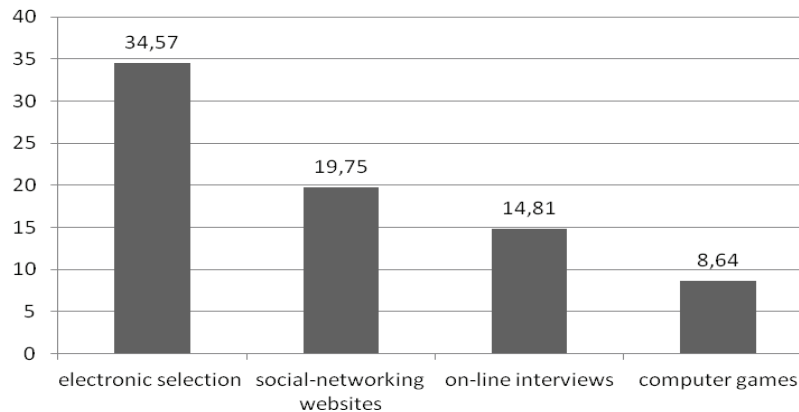
Source: author's own study.

Conducted study indicates low practical prevalence of implemented high-tech solutions, as only every third company used electronic selection, and only every fifth enterprise used social-networking websites. In only 15% of enterprises interviews with candidates were conducted on-line, and in only 8.64% of enterprises computer games were used in the recruitment and selection process. The degree of using IT tools such as e-learning/educational platform in employee training and development was also analyzed. According to the study, such solutions were applied in every third company (33.33%). A significant solution used in enterprises was an integrated IT system supporting human resources management (HRMS) (e.g. SAP, SaaS, Microsoft Dynamics) applied in 30.86% of studied enterprises.

Diagnosed use of IT tools in HRM points to low implementation of such solutions in practical activities of innovative enterprises. According to 41.98% of respondents, causes of this status quo lie in the lack of funds for new systemic solutions based on information technologies. However, only 25.93% of investigated enterprises are planning to implement systemic solution in the IT area in the next 12 months.

5. SUMMARY

Information technology development exerts strong impact on specific areas of high-tech enterprise management, and owing to possible use of the latest IT solutions, it is possible to improve the human resource management process. A review of IT solutions applied worldwide points to their widespread use in HRM processes such as: recruitment and selection, development and training, employee assessment, motivation, talent management, personnel service. Tool application analysis revealed a broad range of solutions available on the market for specific processes and for each such process further future development is planned. Moreover, IT tools are widely used in HRM processes and in the future enterprises are planning their further implementation due to drawn advantages.

In line with the diagnosis, the level of IT tool implementation in HRM processes taking place in Polish innovative enterprises is low, which, according to enterprises, results from the lack of funds for implementation of this type of solutions. However, every fourth company is planning to implement IT solutions in HRM in the next 12 months. Due to little experience of Polish enterprises in this area, solutions presented in the paper used worldwide will constitute a valuable guideline and they may be helpful in future implementation of these solutions.

Forecasts of IT solution development in HRM prepared by Sierra-Cedar point to development of solutions on the global scale, increasing effectiveness and tool innovation as well as standardization of administrative and talent management processes. Moreover, individual HRM processes will get

consolidated in Human Resources Management Systems and strive to serve more workforce from a single HRMS and single payroll solution. Requirements set by contemporary markets force high-tech enterprises to have a future-oriented approach to human resource management and use the latest tools that improve effectiveness of operation. In the future, development of technologies will impact new forms of work organization in enterprises, improved work flexibility by use of distant working, as IT solutions will constitute mobile cloud-based solutions, allowing to perform work in various locations.

REFERENCE LIST

1. Bartram D. (2004). Assessment in organizations. *Applied Psychology, 53.*
2. Bauer, T. N., Truxillo, D. M., Paronto, M. E., Weekley, J. A., & Campion, M. A. (2004). Applicant reactions to different selection technology: Face-to-face, interactive voice response, and computer-assisted telephone screening interviews. *International Journal of Selection and Assessment, 12*, 135–148.
3. CedarCrestone 2013-2014 *HR Systems Survey, HR Technologies, Development Approaches, Value and Metrics,* 16th Annual Edition.
4. Francis H., Parkes C., Reddington M. (2014), E-HR and international HRM: a critical perspective on the discursive framing of e-HR, *International Journal of Human Resource Management, 25* (10).
5. Gueutal H.G.& Falbe C.M. (2005). *eHR: Trends in delivery methods. In H.G.Gueutal &D.L.Stone* (Eds.), The Brave New World of eHR: Human Resources Management in the Digital Age (pp.190-225), San Fransisco, CS: Jossey Bass.
6. http://blogs.gartner.com/brian_burke/2014/04/04/gartner-redefines-gamification/ (Access:16.04.2015)
7. Technology Advice (2015) Retrieved from: http://technologyadvice.com/gamification/smart-advisor/(Access:16.04.2015)
8. internet Worlds Stat (2015). Retrieved from: http://www.internetworldstats.com/stats.htm(Access:16.04.2015)
9. People fluent (2015). Retreived from: http://www.peoplefluent.com/performance-management-system (Access:16.04.2015)
10. Research and Markets. (2015). Retrieved from: http://www.researchandmarkets.com/reports/2757610/global_talent_management_software_market_20142018, (Access: 16.04.2015)
11. Success factors. (2015). Retrieved from: http://www.successfactors.com/en_us/solutions/talent/onboarding.html(Access:16.04.2015)
12. Badgeville. (2015) Retreived from: https://badgeville.com/our-story(Access:16.04.2015)
13. Jung-Wen Hsia H., Chia-Chi Ch., Ai-Hua T. (2014). Effects of individuals' locus of control and computer self-efficacy on their e-learning acceptance in high-tech companies, *Behaviour & Information Technology, 33* (1).
14. Kmieciak R., Michna A., Meczynska A. (2012) Innovativeness, empowerment and IT capability: evidence from SMEs, I*ndustrial Management & Data Systems, 112* (5), 707-728.
15. Kottemann J.E., Boyer-Wright K.M. (2009). Human Resource Development, Domains of Information Technology Use, and Levels of Economic Prosperity, *Information Technology for Development, 15 (1)* Winter 2009.
16. Noe, R. A. (2005). Employee training and development (Third Edition).
17. Rakowska A., Pastuszak Z. (2014). Manager with a head in the clouds. Cloud managing and its impact on human resource management, *Journal of Management and Finance, 11* (4), Part 2.
18. Salas, E., DeRouin, R., & Littrell, L. (2005). *Research-based guidelines for designing distance learning: What we know so far.* In H. G. Gueutal & D. L. Stone (Eds.) The Brave New World of eHR: Human Resources Management in the Digital Age (pp.104-137). San Francisco: Jossey Bass.
19. Sierra-Cedar, 2014-2015 *HR Systems Survey, HR Technologies, Development Approaches, Integration, Metrics, and Value*, 17th Annual Edition.
20. Spitzer D.R. (2007). *Transforming performance measurement: Rethinking the way we measure and driver organizational success,* AMACOM Div American Mgmt Assn.
21. Strohmeier S. (2007). *Research in e-HRM: Review and implications, Human Resources Management Review 17.*
22. Sceince Direct. (2015). Retrieved from: http://www.sciencedirect.com/science/article/pii/S074756321300407X (Access: 16.04.2015)

23. Zoho. (2015). Retrieved from: www.zoho.com (Access: 19.04.2015).
24. Blogs Gartner. (2015). Retrieved from: http://blogs.gartner.com/brian_burke/2014/04/04/gartner-redefines-gamification/
25. Technology advice. (2015). Retrieved from: http://technologyadvice.com/gamification/smart-advisor/