The Digital Workplace: Implications for Human Resource Management

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Abstract

The digital workplace is increasingly being considered as a significant and crucial organizational asset for enhancing workers' productivity. Scholars have conducted extensive research on topics related to Digital Workplace, there is no specific research stream dedicated exclusive to this topic. This study is a conceptual study which delivers summarized content for practitioners and researchers on digital workplace and its design. For The organizations across the world, the pace of digital transformation is impacting matters linked with workforce optimization, talent transformation, up-skilling and re-skilling, training, and resource development. These concerns are central to human resource management (HRM) and demands a shift in the traditional functioning of HR teams. Therefore, the strides made on the digital aspects of the workplace should not be delinked from the HR aspects. HRM in the digital era encounters challenges on two fronts – one, making company processes automated and data-driven and two, bringing about a radical shift in the ways work is designed and done in the organization. This paper presents key strategies for HR managers to successfully adapt their organization to the digital workplace. For this we conducted a screening and review of academic-practitioner literature. Research articles, conceptual studies, review papers and other relevant content on the topic were accessed and reviewed through web sources and databases such as Proquest, EBSCO host and Google scholar to achieve the objective of the study. This study could act as a frame of reference for researchers, and could enable practitioners to develop an enhanced understanding of "Digital workplace" and its implications for Human Resource Management.

Keywords: *Digital Workplace, Human Resource Management, E- HRM, Information Technology, Modern workplace, Organizations.*

Introduction:

We are living in the Digital Era, where technological enhancement is transforming the way we live and work. As technology is advancing at an unprecedented rate, multiple innovations are disrupting the way we work. As per 2017 Deloitte report, named Human Capital Trends, latest technologies such as Artificial Intelligence ("AI"), sensors, social collaboration systems, mobile platforms, have dramatically transformed the way we live, work, and communicate –at an accelerating pace. As people work later in their lives, today's workforce is made up of both digital natives and digital immigrants (Prensky, 2001). Technological developments and demographic shifts bring about some significant challenges for managers of knowledge workers. (Koffer, 2015). Organizations are compelled to act and adopt the digital work with all its ever-evolving features. (D'Arcy 2011; Stieglitz & Brockmann, 2012) In order[1] to

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accurately reflect their employees' dramatically changing work experience, the organizations are increasingly adopting and embracing a new working environment – the digital workplace. The digitalization is reshaping the workplace and the nature of work itself with almost fifty per cent of jobs in the world having the potential to be automated according to a survey by McKinsey Global Institute, 2017

Technology is influencing businesses pervasively. Talking specifically with respect to HRM, the application of digital tools is metamorphosing traditional HRM into E-HRM. Infact the impact technology on human resource management (HRM) is much wider in scope. Digital transformation is moving HR away from an administrative role to one that is much more strategic and people-centric. An increased requirement of knowledge workers possessing high level intellectual skills is being felt. These challenges accentuate the role of human resource executives, who are all poised to serve as strategic partners to their businesses, thanks to technology. The various technologies used by employees right from simple emails to sophisticated HR applications at the digital workplace are dissolving communication barriers, enabling you to completely transform the employee experience leading to efficiency, innovation and progress. Digital HR has a huge productivity impact, as it allows them to focus on activities that are of more strategic value to their businesses. "If you move with the speed of the technology today, it allows you to be strategic and leverage data, and to make strategic business decisions," says Larry Pernosky, chief human resources officer for Amedisys. However, the challenge lies in how the digital workplace strategy is effectively implemented which is capable of bringing about a cultural change, as per a study by Delloite, named "The digital workplace: Think, share, do Transform your employee experience",2011.

Research Objectives

The Research objectives of this paper are as follows:

1. To develop an understanding of the concept of "Digital Workplace" and the features that characterize a digital workplace.
2. To develop an understanding of the implications of the Digital Workplace for the Human Resource Management.

The Digital Workplace

The traditional workplace has been undergoing several dramatic shifts. Organizations are at the cusp of a digital revolution. According to a Deloitte report (2011) the digital workplace includes all technologies that is employed at the workplace to get the work done. This can range from email to instant messaging applications and social media platforms. The volume of IT driven tasks has phenomenally increased. (Tarafdar, Pullins, and Ragu-Nathan 2015). Multi-device use is on a rise as 66% of the employees have been found using at least two devices in 2013. According to Dery and McCormick (2012) considerable changes have taken place from the year 2006 to 2012 in how work is performed. There is a rise in the use of technology such as smartphones, cloud services, virtual networks, webbased services etc. and these technologies are increasingly becoming mainstream, according to a Capgemini report. According to Ghoshal (2015), Social media, mobility, analytics, cloud and internet of everything ("SMACI") are the key drivers of digital transformation. Another thing that has changed dramatically is the, locations of work. Quite a few firms have been able to partially or completely done away with traditional offices (Mulki, Bardhi, Lassk, and Nanavaty-Dahl 2009). In a highly competitive market, the "Digital Workplace" provides a value-added distinguishing factor in order to address new needs such as mobility, seamless working between multiple devices, social media etc. Furthermore, the traditional methods of delivering workplace services, is incapable of meeting these newly emerged needs. The four key research topics on the digital workplace that are present in academic-practitioner literature: 1) Collaboration, 2) Compliance, 3) Mobility, and 4) Stress and overload. (Koffer,2015)

The digital workplace framework

A study reviewed by the author was conducted by the Deloitte Group in the year 2016 titled "The digital workplace: Think, share, do Transform your employee experience". The study gave the following digital workplace framework which includes four layers which comprises of the following components. (Figure 1)

Use: The digital workplace has primarily to do with ability to enhance their productivity by collaborating and connecting with others. Digital workplace facilitates employees to forge meaningful business relationships which extends beyond natural work groups also.

Technology: Technology enables the digital workplace. Every organization has a digital workplace toolbox with several tools which suits its needs the best. Which tools would best work for an organization depends on the industry it operates in and business needs. It is crucial to adopt the right mix of tools is that minimizes cost and maximizes productivity.

Control: The optimum use of technology in the digital workplace has to be supported by appropriate controls. The digital workplace needs to be augmented with appropriate management processes and governance structures. Data usage, flow of information must also be in compliance with the organization's policies as well as the industry and government regulations.

Business drivers: It is necessary that business goals drive the digital workplace. The design of the digital workplace, the deployment of various digital tools and the benefits it brings should be driven by the strategic business objectives. The trajectory that the organization takes should determine the contours of the digital workplace so as to ensure optimum efficiency.

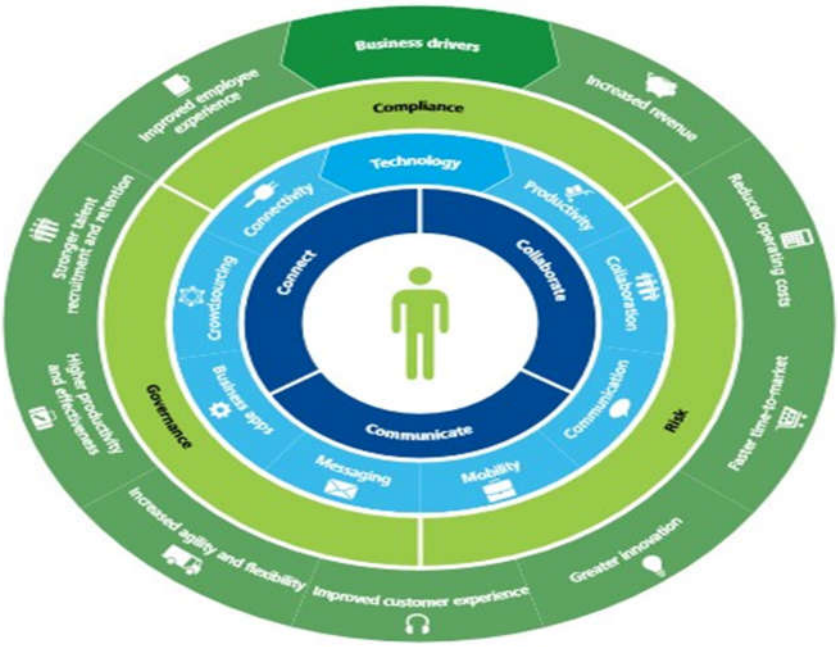

Figure 1 The Digital Workplace Framework

Source: The digital workplace: Think, share, do Transform your employee experience,

The Deloitte,2011

According to Capgemini Consulting report titled "The New Digital Workplace", (2013), Technology users expect the IT to manage new technological trends as they emerge in the market but the adoption process can be a stretched out and complicated. Innovations like: Google glass, iWatch, connected objects, electronic pens, 3D printing, Wi-Fi printing, curved screens are increasingly being adopted and used by the digital workers. Organization should modify its governance model to save the workplace from mindless "gadgetization" and embrace the technology that actually meaningfully contributes to the achievement of the organizational goals by enhancing productivity of the employees .The organization can also embark on technology watch programs to ensure that keep a track of the value addition that occurs through technology for the business and the percentage of users who could be potentially be impacted due to the adoption of an emerging technology in their workplace.

According to the report by the Deloitte Group in the year 2016 titled "The digital workplace: Think, share, do Transform your employee experience", all organizations have a digital Toolbox whose tools differ with the industry and job functions. Digital toolbox consists of the digital tools and technologies the employees require to carry out their jobs. Organizations should create a digital workplace strategy that clearly articulates their strategic business objectives which should further guide the development of the digital toolbox. An honest assessment of the organization's capabilities, its culture and business requirements, can assist organizations in identifying the tools they would need most. For majority of organizations, the digital workplace toolbox can be mainly defined in eight categories to assist how you communicate, collaborate, connect and deliver your products and services. (figure 2)

Figure 2 The Digital Workplace Toolbox

Source: The digital workplace: Think, share, do Transform your employee experience,

The Deloitte,2011

Technologies influencing Human Resources Management

Literature Review:

Technology is already being used by HR Professionals to a reasonable degree but the digital revolution necessitates to understand how HR can incorporate IT in their strategy to utilize such that organizations derive competitive advantage through human capital and have the processes that directly align with the business strategy (Huselid, 1995). Indisputably, technology is one of the key factors that shape HR practices and their implementation (McCampbell, Clare & Gitters, 1999). One of the major hurdles in embedding digital processes in the various HR processes and practices is the high cost attached with its deployment. Additionally, the adoption of innovative HR practices largely hinges on the presence and strength of certain organizational factors to facilitate and bolster such innovation on organizational context (e.g. size and unionization) (Pfeffer,1981) Even as the organizations realize the inevitability and the competitive necessity to embrace the digital revolution, they also believe that the is still much to learn about how to strategically deploy and align technology to leverage its benefits for enhancing the firm's performance (Tippins & Sohi,2003).

Definitions provided by different authors for EHRM, highlight the multilevel nature of the e-HRM phenomenon in which information and communication technology is used to perform HR functions. As per these definitions technology has two different dimensions: On one hand technology is used as connector system which enables communication between different actors and allow integration of different activities. As per the other aspect, sometimes technology is used as substitute of executive HR activities, exploiting its automation use. e-HRM has a similar concept: the so-called "virtual HRM", where a pool of internal and external actors provides the organization with a wide remit of HR services, such that a separate HR department becomes unnecessary. As per the current literature on E- HRM, the three major goals of HRM are cost reduction, Enhancing the quality of HR services, and sharpening the strategic orientation of HR. (Brockbank, 1997; Lepak and Snell, 1998; Stanton and Coovert, 2004). Further, according to the surveys of HR consultants there is a continuous rise in both the number of firms adopting EHRM and the depth of applications being used within the organizations (Cedar & Crestone, 2005). According to Esen and Erdogmus (2011), integration of IT with HR is being strategically brought about to enable human resources be the source of competitive advantage for organizations. Bondarouk and Brewster,2016 applied the 'Harvard' model of HRM, to the literature on IT and HRM and outlined the various merits and demerits of the confluence of HRM and technology to different stakeholders. They showed that rapid technological developments provide a new, smart, digital context for HRM practices with improved accuracy of HRM data and allows a strong HRM ownership by all stakeholders. E-HRM consequences can be considered at a micro-level as user satisfaction or acceptance, as individual impacts, or at a macro-level as operational, relational or transformational consequences (Snell, Stueber, & Lepak, 2002).

Implications of Technology for Human Resource Management

Technology has led to radical changes in the organizational and work design, which further accentuates the need for a digital evolution of the HRM function as well. Technology is being increasingly embedded within organizations and facilitating the accomplishment of organizational objectives, but human resources is still far from being a key driver of these changes. Human Resources as a function, therefore, needs to embrace and deploy the technology such that it supports these changes occurring throughout the

organization (Hempel,2004). Walker (2001) said that with the inception of HR technology and HR service centers, HR is all poised to be consultants and professional partners with line managers as they would soon shed the transactional role they play to technology and would instead focus on more high value adding functions. In this context, HR technology platforms offer more and more Integrative data driven services while at the same time bringing down the transactional burden on the HR function. In the last three decades' scholars and practitioners have showed an increasing interest in investigating how technologies is changing Human Resource function, its design and processes. They discussed a range of technologies available for re-engineered HR processes such as workflows, manager self-service, employee self-service, HR service centers, HR information systems ("HRIS") and others. HR technology must achieve the following three objectives; strategic alignment with the objectives of the users, provide business intelligence thirdly, it must change the work performed by HR professionals by substantially increasing their effectiveness, reducing costs and allowing more time for HR functions to conduct activities of higher strategic value. (Walker,2001)

A general framework has been generally applied to previous researches on e-HRM and can be considered the most appropriate structure to understand the concept of e-HRM. The proposed framework considers the application of e hrm at two levels: the micro-level, which refers to the individual level, and the macro-level which considers the organization a broader sense. IT segregates the context, configuration and consequences of eHRM, suggesting that the configuration will determine the consequences of e-HRM, while both configuration and consequences is moderated and preceded by contextual factors. (Strohmeier, 2007.)

The digitization of the workplace has led to dramatic changes in how employees communicate with each other and their organizations. (Jesuthasan, 2017) With Instant messaging apps such as Skype for business, email and collaboration platforms such as Yammer and Slack gaining popularity workers are using latest technology to interact with each other not only when based in the same office but when working remotely or internationally. Digital collaboration tools are changing how employees interact with their organizations. Cianni and Steckler,2017 say that digital is going to transform the way work is designed and done, including the work of HR professionals. According to senior HR professional's, self-service portals have the potential to deliver value, just as HR analytics and the inter-connectivity of various internal and external social media platforms. An always- on HR technology is required to meet the needs of a businesses that operates 24*7 beyond the traditional nine to five opening hours (Goldstein, 2014). Digital collaboration tools are changing how employees interact with each other and their organizations. Traditional face to face engagement is being replaced or augmented with such collaboration tools as well as online benefits portals and social learning platforms. Engagement is moving more and more to a digital landscape. According to Jesuthasan HR has to lead in engaging the entire workforce on the digital transformation journey by redesigning the work. Traditional HR practices need to be reengineered to incorporate and embrace digitization fully, Flatter organizations have to be designed and functions such as performance management and recruitment need to be redesigned to ride on the back of digital revolution and meet demands of tech-savvy employees. (Bersin, 2015). Predictive recruiting and predictive training development are some of the anticipated concepts to align the function to the business strategy through analytics. Oracle in 2015 reported about a "modern HR in the Cloud", highlighted an increasing use of cloud solution in HRM especially in the form of SaaS (software as a service). HR is no longer required to run human capital management operations on premise as they can utilize low cost flexible cloud capabilities. Another important implication of technology for HRM is the management of knowledge workers. Drucker (1999) notes that the primary management challenge now lies in the improvement of knowledge-worker productivity. Gupta and Singhal (1993) recommends a number of ways in which knowledge workers can be managed which requires a significantly different approach compared to the management of manual workers**.** Thus, the way traditional HR conducted job analysis all these years has become increasingly outdated, and HR must reorient how work processes and teams are

organized and designed. This requires a strategic reorientation of HR and it is not an overstatement that technology is the key driver behind these changes.

Based on a review of both practitioner and academic literature, the authors were able to identify the following key strategies that can help HR professionals reinvent their function utilizing digital technologies and fully prepare to manage the workforce of the future:

Move to an integrated, consolidated HR platform

A central consolidated HR platform can provide the unified, consistent data needed to gain a single view of the workforce, automate extended processes, and work seamlessly across interaction channels. Technology driven intuitive tools integrated on one common platform certainly diminishes the administrative overhead, and increases employee efficiency. In other words, this suggests that HR will be involved in less of administrative and paper work and more of "real work" that adds far greater and strategic value to the organization.

Use of business intelligence (BI) and dashboards.

Organizations are already equipped with basic reporting infrastructure are creating data warehouses, but the challenge lies to convert this data into a form usable for managers. To achieve this organization should adopt more sophisticated BI applications. HR dashboards, which provides real-time, crucial data to managers, will meaningfully contribute to the effective management of human resources. Additionally, organizations will begin to make use of more sophisticated web-based workforce analytic tools. A data-driven approach combines data from several sources—such as business performance systems and staffing databases—into a unitary platform that allows top management to see the direct links between employee and business performance.

Utilize cloud for agility and innovation

Digital HR is highly agile and capabilities can be acquired from a company's own data centers or through cloud-based services. Utilizing cloudbased services can dramatically empower HR. This requires closer work with IT departments, as HR will be increasingly directly overseeing technology solutions. The move toward SaaS will contribute to the integration of HR function with other disciplines. Moving towards cloud is the need of the hour if HR truly wishes to achieve a strategic orientation making meaningful contribution to the organizational objectives. Over half of purchased core HRM systems are now cloud based HR systems. The cloud is where everybody is heading to be constantly relevant as it is capable of transforming an entire company culture.

Use analytics for deeper insight

HR executives need to develop analytical thinking in their decision making. Analytics can be used to develop insights that can bolster HR processes and measure the effectiveness of HR and the impact it has on the business. One area to which Data and predictive analytics can contribute the most is the management of talent as it would allow to keep track of availability, preferences of resources and performance. When combined with data from other parts of the business, the power and value of data analytics will increase manifolds. Big Data allows HR professionals to make decisions aided with vital information. Big Data enables HR to identify the latest trends by giving them a fact-based view of the present workforce. HR can capitalize on the data to shape the workforce of future and enhance its effectiveness. A very forward-looking human capital group is using analytics to streamline data from disparate systems and utilizing it to make data driven informed decisions.

Use of social media

Social media plays an active in HR today, especially for recruitments. Social Media is an effective channel for engaging employees, helps HR executives to improve collaboration and speed up HR processes. Several employers using social media platforms like Facebook and LinkedIn to recruit Employees. HR should as a next step focus on integrating information from social networking sites. Even as social media accrues several benefits, it is fraught with risks of privacy and data inaccuracy**.** Social media provides a wide remit benefits to HR professionals and enables them to keep abreast of the latest news, technology and trends and strengthening relationships through sharing industry knowledge. Thus, it is a thriving forum to engage employees, create relationships and strengthen interactions at the workspace.

Make HR mobile

Mobile technology is central to reaching a mobile, dynamic workforce. Employees and managers perform a wide range of HR transactions on mobile, as most view mobile access as an essential, reflecting the increased usage of mobile to reach dispersed employee populations and the expanding expectation of mobile as a standard, especially with the Millennials. With the creation of e-signature technology documents can be received and signed immediately on any device with a mobile connection, irrespective of the employee's location.

Changes in HR staff skills.

HR professionals with certain new skill sets will be in demand in the coming times. Transition from generalists involved with transactional work to internal consultants who are instrumental in the alignment of the HR practices with business goals is the need of the hour. Foremost they will have to be technically proficient and some basic knowledge of HR analytics would be a big welcome. They will also have to arm themselves with skills in change management and business process management. Also, HRIS skills will become more important for all HR professionals. Organizations will need HR professionals who can work collaboratively with external vendors to implement software and evaluate the consequences of new software initiatives on the HR practices of the organization.

Conclusion

To conclude, almost 42% of employees use computers with Internet connectivity. These workers form a thriving population of the digital workplaces. (Benson,2002). The digital workplace is a concept that explains how technology is giving rise to a virtual equivalent of the physical office, and how it allows businesses to rethink traditional processes and enhance productivity. The use of the digital tools that characterizes this new workplace has the potential to make a positive significant impact on performance. These digital tools are largely influencing the way workers communicate, make decisions, and conduct business technology. This also represents a tremendous opportunity for HR department since technology empowers HR processes. HR professionals should embrace technologies that permit the reengineering of the HR function, play active role in supporting organizational objectives driven by digitalization, and be able to create a conducive managerial climate for knowledge organizations. Managing Knowledge-worker productivity is also a challenge faced by HR today, since the intellectual capital is increasingly becoming a key source of competitive advantage. Fancy e-HR applications are meaningless if HR fails to contribute to the bottom-line. The profession will be able to march towards a strategic orientation through a complete reengineering. One of the major challenges for the firms would be to ensure that HR professionals are armed with requisite knowledge of applications of e-HR and HR analytics to better take on the challenge that the Digital revolution poses.

References

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

Benson, A. D., Johnson, S. D., & Kuchinke, K. P. (2002). The use of technology in the digital workplace: A framework for human resource development. *Advances in Developing Human Resources*, *4*(4), 392-404.

Bersin, J. (2015). Becoming irresistible: A new model for employee engagement. *Deloitte Review*, *16*(2), 146-163.

Brockbank, W. (1997). HR's future on the way to a presence. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, *36*(1), 65-69.

Cianni, M., & Steckler, S. (2017). Transforming organizations to a digital world. *People & Strategy*, *40*(2), 14-20.

Crestone, C. (2005). The Cedar Crestone 2005 workforce technologies and service delivery approaches survey. *8th Annual Edition*.

Charles. et al. (2017) The New Digital Workplace Employee Productivity, Brand Image, Business Value. Retrieved from Capgemini consulting website: file:///C:/Users/hp/Desktop/digital%20workplace/the-way-we-work-hr-today_pwc-en_2017.pdf

Dery, K., & MacCormick, J. (2012). Managing Mobile Technology: The Shift from Mobility to Connectivity. *MIS Quarterly Executive*, *11*(4).

Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California management review*, *41*(2), 79-94.

D'Arcy, J., Gupta, A., Tarafdar, M., & Turel, O. (2014). Reflecting on the" Dark Side" of Information Technology Use. *CAIS*, *35*, 5.

Erdoğmuş, N., & Esen, M. (2011). An investigation of the effects of technology readiness on technology acceptance in e-HRM. *Procedia-Social and Behavioral Sciences*, *24*, 487-495.

Gupta, A. K., & Singhal, A. (1993). Managing human resources for innovation and creativity. *Research-Technology Management*, *36*(3), 41-48.

Goldstein, J. (2014). Digital technology demand is transforming HR. *Workforce Solutions Review*, *6*(1), 28-29.

Ghoshal, S. (2015) Imagining the Digital future: How digital themes are transforming companies across industries, February 2015.

Hempel, P. S. (2004). Preparing the HR profession for technology and information work. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, *43*(2-3), 163-177.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of management journal*, *38*(3), 635-672.

Jesuthasan, R. (2017). HR's new role: rethinking and enabling digital engagement. *Strategic HR Review*, *16*(2), 60-65.

Katyayani, J, Rani, C. (2017) Technological Trends in Human Resource Management. International Journal of Scientific & Engineering Research,8(5),217-224.

Köffer, S. (2015). Designing the digital workplace of the future–what scholars recommend to practitioners.

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.

Mulki, J. P., Bardhi, F., Lassk, F. G., & Nanavaty-Dahl, J. (2009). Set up remote workers to thrive. *MIT Sloan Management Review*, *51*(1), 63.

Pfeffer, J. (1981). Management as symbolic action: the creation and maintenance of organizational paradigm. *Research in organizational behavior*, *3*, 1-52.

Prensky, M. (2001). Digital natives, digital immigrants' part 1. *On the horizon*, *9*(5), 1-6.

Ruël, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation. An explorative empirical study in five large companies on web-based HRM. *Management revue*, 364-380.

Ruel, H. J., Bondarouk, T. V., & Van der Velde, M. (2007). The contribution of e-HRM to HRM effectiveness: Results from a quantitative study in a Dutch Ministry. *Employee relations*, *29*(3), 280-291.

Sadri McCampbell, A., Moorhead Clare, L., & Howard Gitters, S. (1999). Knowledge management: the new challenge for the 21st century. *Journal of knowledge management*, *3*(3), 172-179.

Snell, S. A., Stueber, D., & Lepak, D. P. (2002). Virtual HR departments. *Human resource management in virtual organizations*, *81*.

Stanton, J. M., & Coovert, M. D. (2004). Guest editors' note: Turbulent waters: The intersection of information technology and human resources. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, *43*(2-3), 121-125.

Stieglitz, S., & Brockmann, T. (2012). Increasing organizational performance by transforming into a mobile enterprise. *MIS Quarterly Executive*, *11*(4).

Seshadri, V. (2016). Awakening the digital HR giant. Retrieved from Accenture Website: https://www.accenture.com/t20171006T021933Z__w__/us-en/_acnmedia/Accenture/PDF-43/Accenture-Awakening-The-Digital-HR-Giant.pdf.

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

Federico, H. (2011) The digital workplace: Think, share, do Transform your employee experience. Retrieved from Delloite Website: https://www2.deloitte.com/content/dam/Deloitte/mx/.../The_digital_workplace.pdf.

Tippins, M. J., & Sohi, R. S. (2003). IT competency and firm performance: is organizational learning a missing link? *Strategic management journal*, *24*(8), 745-761.

Walker, A.J. (2001), "How the web and other key trends are changing human resources", in Walker, A. (Ed.), Web-Based Human Resources, McGraw-Hill, pp. xiii-xxviii.