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ICT APPLICATION IN HUMAN RESOURCE MANAGEMENT PRACTICES IN SMALL BUSINESSES: OPPORTUNITY AND CHALLENGES

Abstract: In recent years, information technology has effects on almost every aspect of our society, as well as on organizational processes, including human resource management (HRM) processes and practices. Continued innovations in technology fundamentally increased the effectiveness of HRM and improve their work efficiency. Main purpose of the paper is on base of a literature review to analyze main challenges and opportunity behind the adoption of ICT in HRM by small business. The research results presented in this paper are part of the project Main human resource management challenges for small businesses (Главни предизвици на малите бизниси во управувањето со човечките ресурси), NIP.UKIM.21-22.21, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia.

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Introduction

Small businesses are a vital source of income and make up 90% of the total number of businesses in developing countries such as the Republic of North Macedonia. Their key feature is working in a dynamic environment characterized by changing customer needs, increased competition, greater need for flexibility and rapid innovation of products and services. Under this competitive reality, HRM has more critical role than ever, as new forms of business demand new ways of engaging people. In traditional HRM, there is too much paper work and long administrative processes. HR professionals must analyze opportunities in the social, economic, political-legal, and technological environment to redesign HRM processes and practices that are critical to the success of the organization's mission and goals. To meet these challenges, HRM is forced to adopt new methods and HR managers have to adopt new methods. On the other hand, they should help organizations define their strategies and build programs for the development of their human capital.

In this context, ICT has increased the effectiveness of HRM through more effective methods of recruitment, organizational communication, employee involvement and increased skills of HR managers. Organizations facing challenging business environments, such as operating in dynamic markets, often are transformed into successful ones by the use of ICT.

Main purpose of the paper is to analyze main challenges behind the adoption of ICT in HRM among small businesses.

Given the interest of this topic, the present work is a literature review about the impact of the adoption of ICT in HRM by SMEs. Therefore, the subject of the research are current situation of the use of ICT among SMEs in order to show their increasing penetration into the business environment. In addition, the paper is analyzing the importance and benefits of ICT usage in HRM and finally, we conclude by reviewing the main opportunities and challenges of implementing ICT in HRM in small businesses.

1. THE IMPORTANCE OF USAGE OF ICT IN HRM

Today the world is shaped by the evolution in the ICT field. Every business organization realizes that ICT is very useful for their business to sustain in this modern economy. Small businesses implement ICT in their HRM practices to improve speed, accuracy, save time, be effective in decision making and increase transparency in their work. Thus, ICT provides reliable and ap-

propriate information that helps to get the right information at the right time for making any kind of strategic decisions. Various HRM practices such as HR planning, recruitment, selection, training and development, performance appraisal, payroll and employee compensation, have brought small businesses to a higher level of production and communication. ICT has increased the efficiency and effectiveness of HR practices, and reduced costs and operating time, on the other hand¹. In addition, increasing the use of information technology for HRM can improve the performance of HR professionals and make them involve in the company's internal consulting activities.²

Modern HRM sees the use of ICT as a catalyst for operational efficiency. These attitudes are supported by the ever-increasing investment in developing countries in ICT-related governance³ However, recent empirical evidence from developing countries suggests that increased investment in ICT does not necessarily lead to higher HR performance.⁴ This can reduce incentives for businesses to use ICT, especially when they face tight budget constraints such as small businesses. In them, especially if there is a traditional way of working, switching to the use of ICT is possible only if the benefits obtained are higher than the investment and maintenance costs.

Technology development is an important activity for the innovation process in any organization. As information technology improves, businesses, especially small businesses, could manage an increasing number of HRM processes in an effective manner, thereby contributing to the availability of information and knowledge⁵. This interaction and intersection between IT and HRM leads to the emergence of e-HRM, a term used to describe IT systems

¹ Manini N., Mahalik D.K., Impact of ICT on Human Resource management Practices: a study on selected manufacturing industries of western Odisha, *Nat. Volatiles & Essent.*; 8(5): 1884 – 1912, Oils, 2021

² Mohrman S.A., Lawler, E.E., Transforming the human resource function. *Hum. Resour. Manage.*, 36: 157-162. 1997, [https://doi.org/10.1002/\(SICI\)1099-050X\(199721\)36:1<157::AID-HRM25>3.0.CO;2-7](https://doi.org/10.1002/(SICI)1099-050X(199721)36:1<157::AID-HRM25>3.0.CO;2-7)

³ Piabuo S., Piendiah N., Njamnshi N., Puatwoe, J., The impact of ICT on the efficiency of HRM in Cameroonian enterprises: Case of the Mobile telephone industry. *Journal of Global Entrepreneurship Research*. 2017, 7. 10.1186/s40497-017-0063-5.

⁴ Chaudhry A. A., Khan K. S., Hassan, A., Can HRM be affirmed as a system? Applying general systems theory (GST) on human resource management. *Journal of Management and Research (JMR)*, University of Management and Technology (UMT), Lahore, Pakistan, Vol. 2, No. 2, 2015

⁵ Bondarouka T.V., Ruëlb J.M., HRM systems for successful information technology implementation: evidence from three case studies, *European Management Journal* Volume 26, Issue 3, June 2008, p.153-165

and processes used in HRM. According to Ruel the term e-HRM was first used in the late 1990s when e-commerce took over the business world. E-HRM is an internal application of e-business techniques to add value to management through a more effective and efficient flow of information and is a way of achieving the goals and activities of the HRM. E-HRM, apart from contributing to cost reduction in the organization, has helped to modify many HR processes, including HR planning, recruitment, selection, performance management, workflow and compensation. These new systems have enabled HR professionals to provide better service to all their stakeholders (e.g., applicants, employees, managers) and reduced the administrative burden on the field.⁶

2. BENEFITS OF ICT IN HRM

Information systems represent a major investment by businesses. Therefore, implementing e-HRM requires weighing the benefits and costs. The common benefits of e-HRM cited by various authors are:⁷

- Improved accuracy;
- Providing time and quick access to information;
- Cost savings;
- Working, controlling and planning activities for HR;
- Increased competitiveness by improving HR practices;
- Increased efficiency;
- Production of a large number and variety of operations for HR;

However, there are costs associated with the implementation of e-HRM, namely:

- Employees should have access to computers and global Internet connections;
- Expensive technology costs, time costs;
- Work issues (change of tasks, need for training, change of jobs, dismissal ...).

⁶ Mohammed A.K., Halim M., Masa H., Khatijah O., E-HRM, workforce agility and organizational performance: a review paper toward theoretical framework, I J A B E R, Vol. 14, No. 15 (2016): 10671-10685

⁷ Boateng A. The Role of Human Resource Information Systems (HRIS) in Strategic Human Resource Management (SHRM) [thesis]. Sweden: Swedish School of Economics and Business Administration; 2007, p.112 Available from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.473.5116&rep=rep1&type=pdf> и Beckers A, Bsat M. A DSS classification model for research in human resource information systems. Information Systems Management. 2002;19(3):41-50

It remains obvious that if technology is to encourage effective HRM in organizations, it should be able to support not only access to documented knowledge, but also, more importantly, knowledge possessed by individuals about the main resources (assets) of the business. HRM must aim to achieve competitiveness in the field of HR by providing permanent educational and training programs for personal and professional development of employees. In addition to improving the visibility and traceability of such knowledge, technology should aim to catalyze the collaboration and transfer of knowledge between its holders both within and between businesses.

According to complementarity theory, utilizing ICT with appropriate organizational resources and capabilities, like worker qualifications, proactive direction, and innovative culture, will result in greater benefits.⁸

There are studies that have tried to identify the differences in the role of IT between service and production oriented industries. Researchers mostly studied Western Europe and the United States, so their results may not apply to other parts of the world due to social and economic differences. Comparatively, developing countries have done very little research in this field.

Chakraborty cites several examples of information collected from HR departments or the environment that are part of e-HRM, such as⁹:

- Information about employees;
- Type of employee recruited during the year;
- Offered training and development;
- Performance evaluation results;
- Promotion, demotion, transfer, separation of employees;
- Offered compensation packages, financial and non-financial;
- Absence of employees;
- Maintenance, safety and health services;
- Availability of HR from different sources;
- Training and development facilities available outside the organization;
- • Expectations of HR from the organization;
- • Government policies affecting employment conditions and labor laws;

⁸ Gargalo A., Gorriç C., The relationship between human resources and information and communication technologies: Spanish firm-level evidence, *Journal of Theoretical and Applied Electronic Commerce Research*, April 2010, DOI: 10.4067/S0718-18762010000100003

⁹ Chakraborty A, Mansor N. Adoption of human resource information system: A theoretical analysis. *Journal of Social and Behavioral Sciences*, 2013;75: p. 473-478

- The trade union movement and its attitudes towards employers' organizations;
- Benchmarking of HRM practices.

Upon incorporating IT, HR in small businesses must remain focused on the strategic goals of the enterprise. On the one hand, this will make HR more efficient and effective, and the use of IT applications for database management and an advanced recruitment system will improve business efficiency. Developing the entity's technological systems, like designing products (research and development) and IT systems, will help improve business efficiency.

ICT implies major changes in the management of HR in small businesses. According to Kwabiah, for the successful implementation of ICT in HRM, it is necessary to pay attention to¹⁰:

- a) Support of the top management in ICT application. Top management is responsible for formulating and implementing set organizational goals based on resources and the corporate environment. It affects organizational performance and decision-making. Top management is responsible for generating resources solely for IT improvement, evaluating departments that benefit from IT investments, reporting to top management on the impact of IT policies and strategies, and reviewing IT strategic policies.
- b) Investing in an appropriate ICT structure. Today's changing customer demands require leaders to stay abreast of the most appropriate IT infrastructures to improve business performance. IT infrastructure networks contribute to better organizational performance by providing good Internet connectivity and coverage, along with computers and other communication devices. Computers, laptops, mobile phones and multimedia devices enhance assimilation flocks and the implementation of IT in businesses.
- c) Trainings and skills for appropriate ICT knowledge. Small business management emphasizes training employees to acquire knowledge and appropriate skills in IT to improve business innovation and performance. Acquiring IT skills and developing employee competencies improve operational and dynamic capabilities, which enable businesses to be robust and flexible to overcome modern challenges. IT knowledge and skills contribute immensely to IT implementation.

¹⁰ Kwabiah W., *Small Business Strategies for Information Technology Implementation in Developing Countries*, Walden Dissertations and Doctoral Studies Collection, Walden University, 2019, p.83

- d) Creating an organizational culture for accepting ICT. Small businesses highlight the role of a good organizational culture for assimilating knowledge among employees. According to Kwabiah, small business managers emphasize respect for local customs, norms and good organizational culture and found that the organization's capabilities depend on routines, processes and organizational culture, which create good customer relations, reputation, employee skills, efficiency and effectiveness in any context. Also, corporate culture affects the way employees accept and interact with organizational information systems, hence understanding the culture of the Internet and related technologies is a critical success factor in implementing IT for e-commerce and business processes in organizations.
- e) Acceptance of legal and regulatory frameworks. IT has become a vital resource for innovation and efficiency improvement in many sectors and has provided a platform for global digital transformation in every segment of society. Despite the benefits of technology, the growing trend of cybercrime has threatened business activities across the information environment due to the lack of a universal legal framework. Therefore, businesses express strong support to ensure the coordinated use and standardization of policies. A long-term IT regulatory framework in the industry provides certainty and facilitates strategic planning by business owners. Small business executives point out that governments and industry partners must strive to close the gaps in cyber operations to improve the security of customer transactions in a digitalized environment.

3. OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING ICT IN HRM IN SMALL BUSINESSES

The application of ICT in HRM among small businesses can be seen in:

1) Improvement of management

IT tools can complement the HRM and improve the efficiency and effectiveness of small businesses, leading to greater success of the business itself as a whole. Especially in small businesses, where IT tools for HR can be used to improve performance, which is more effective and efficient with the im-

proved operational efficiency of IT. By providing a universal set of products, companies can diversify their business by getting better products and services.

2) *Effective recruitment*

Small businesses use online job portals to search for the best candidates for the position. The process is efficient with the use of the internet because many people find out about the offer and this increases the probability of hiring efficient employees. Employers can present all the necessary information related to the work, career and personal development of each employee on the portals online. This is a great promotional tool for the organization. IT tools not only help to hire the best potential, but also to retain them.

3) *Data management and critical analysis*

IT tools make it easier to analyze employee performance data, and it's more accessible. This increases the efficiency of work and its effectiveness. Organizational performance can lead to the timely success of a business whether it is in a stable or unstable environment.

4) *Career development and human capital management*

Performance appraisal and career advancement can be a key motivational factor for employees to work effectively and efficiently. Performance measurement and reward systems in an organization establish attitudes of priority. Changing reward systems to make them based on performance goals stored in HR IT tools make sense. Employees are rewarded based on desired behavior and results based on IT tools regarded to:

- Career development: analysis of careers, their evolution, development of career plans and achievement of stated goals;
- Education, skills and training programs: analysis and identification of competencies, identification of training needs, access to remote training content;
- Appraisal of employee performance: definition of performance objectives, design of evaluation metrics, performance evaluation and feedback on results.

HR development process is tool that provides all information on employee succession planning, overall performance evaluation and individual potential review, including a detailed employee profile. It also includes an agree-

ment between the individual and the supervisor for business purposes over a period. It leads to continuous development of the employee's career.

5) Automation of HR processes

HRM is an incredibly complex domain involving many processes. HR specialists spend too much time on mundane, monotonous activities. Implementing technology into the HR workflow frees professionals from a large amount of routine work. Process automation eliminates documentation, speeds up the execution of many tasks and contributes to more efficient performance. Advances in technology mean companies can use the latest innovations, such as machine learning to review resumes and augmented reality to onboard new employees.

6) Availability of HR tools

There are hundreds of HR tools available specifically designed to facilitate and optimize the work of HR specialists. Features of HR software include:

- Streamlining work flows;
- Organization and management of employee data;
- Creation of detailed records for employees
- Social cooperation;
- Payroll, vacation and bonus management.

The transition to a digital work environment allows modern HR specialists to perform certain tasks in a faster way and thus pay more attention to issues such as employee satisfaction, optimization of recruitment and onboarding processes, employee motivation, etc.

7) Advanced candidate search

One of the main responsibilities of a HR specialist is finding and recruiting specialists that the company needs at the moment. IT has significantly changed the way these approached processes.

First, the Internet has given HR professionals the ability to search for candidates worldwide. Freelancers have become commonplace now, and collaborating with freelancers can be even more beneficial than hiring an in-house team. This way, HR specialists can fill the gap that their internal team is missing and find the perfect candidate anywhere in the world.

Second, HR specialists can use advanced tools (i.e. artificial intelligence) to screen resumes and pay attention to only those profiles that strictly match the requirements. This greatly speeds up the search process and helps find the most suitable candidates.

8) *A new way of branding a company*

Company branding is an important factor in attracting and retaining employees. Thanks to IT, companies now have the ability to build a strong online presence and reach numerous potential candidates with minimal effort. Thorough branding and website design, presence in major markets and online communication - all these factors promote direct interaction between the candidate or employee and the company.

Social media also plays a huge role in company branding. Social platforms have become a key source of information, and candidates are more likely to search for a company on LinkedIn than through traditional sources. Hence, companies should consider what image they would like to build and what values and messages they want to convey to users. IT has greatly expanded not only the talent pool, but also the way HR professionals can reach top talent and promote the company online.

9) *Analytics gives access to more data*

Finally, information technology has given HR professionals access to sophisticated analytics, taking their work to a new level. Previously, HR professionals had to rely on guesswork and intuition when evaluating employees, their level of motivation and satisfaction, and the effectiveness of HR processes. Now, all processes and work results are reflected in numbers, so they can rely on it.

With the help of analytics, HR professionals can track the candidate journey and see at what point the most people decline (or accept) an offer, how many people are involved in the processes, what percentage of employees open their emails and more other important events.

In this way, HR specialists can make data-driven decisions and use past experience as a basis for redesigning and optimizing current processes. E-HRM can help in various aspects of this area:

- Records of employee discipline: access and management of disciplinary procedures, reports on disciplinary procedures;

- Trade union and labor distribution: management of information about trade unions and workers' committees, distribution of work and analysis of indicators of work and labor relations;
- Attitude, Climate, Culture and Commitment: The ability to automatically query the entire organization and perform attitude, climate, culture and commitment analysis.

10) Strategic management of human resources

The strategic HRM is characterized by adopting a dynamic vision for the resources it manages. It covers not only the planning and implementation of the actions, but also the control of the results, that are related to the organization's strategy.

11) Manpower planning and employment

HR planning for what the organization will need is of great importance to HR professionals, revealing different skill profiles, work schedules, enabling the organization to have the right people, in the right quantity, at the right time. It reflects the interests and perspectives of the organization, as well as the aspirations of candidates and associates. E-HRM give information in this area like:

- Promotions, Transfers, Hiring and Termination Rates: Tracks data for analysis and decision making for workforce planning and hiring needs.
- Work analysis and definition: enabling employees in geographically dispersed locations to work together.
- Recruitment and selection: the ability to support processes by creating tools that are more agile and enable online work.
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12) Awards

Reward systems consist of all material and non-material benefits, which employees can receive, depending on the quality of their performance, contribution to the development of the business and its identification with the values of the organization. E-HRM allows identify the following information regarding the awards:

- Salary information: salary processing, vacation management, leaves and absences, automatic calculations of salary components.

- Retirement planning: identifying succession plans, pensions, streamlining severance programs.
- Administration of benefits: imputation of benefits, analysis of imputed benefits, analysis of costs and benefits.
- Salary analysis: analysis of salary development, salary comparisons.

Conclusion

As technology evolves, it forces HRM to adopt new processes in its practices. As a result of these changes, E-HRM emerged to take into account improved accuracy, quick access to information, increased competitiveness and efficiency, and re-engineering HR. Many questions remain about the real goals of e-HRM and how they answer HR's real needs. However, its role in the HRM allows us to respond more quickly to changes and HRM needs, for example, enabling budget control, monitoring and verification, skills matching, assessments, feedback, workforce planning, succession planning, skills monitoring, training needs analysis and global analysis. By focusing on using technology to continuously improve the quality of work, technology can improve the information available to HR, streamlining HR processes and making them faster and more effective. One of the biggest allies in HRM, e-HRM has been adopted to make organizations more accurate and effective. HR professionals need to prepare for the future by preparing for new roles or finding outsourcing.

Within this, top management must be involved and support the IT implementation, setting the direction and ensuring specific investment in IT infrastructure aligned with overall organizational goals. Owner-managers of small businesses must begin training and development, focusing on the acquisition and retention of relevant skills through workshops, seminars and symposia organized by competent and qualified educational centers. Also, they must create a favorable organizational culture by gradually exposing and motivating employees to embrace the IT culture. Strong support from owner-managers would reduce organizational resistance by creating cultural values that support technology adoption and implementation. Small business managers implementing IT need to understand the role of government policies and work within the regulatory framework to ensure a smooth transition.

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