Digitalization of HR activities in industrial enterprises

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Abstract. The report substantiates the need for digital transformation of human resources management in industrial enterprises in order to be adequate to the dynamic development of technologies in the modern digital world. Based on the conducted research, the current state of the human resources management system in industrial enterprises and the degree of introduction of digitalization of HR activities were analyzed. The main problems and difficulties related to their digitalization are formulated, as well as guidelines for improving the management of human resources in the studied enterprises.

1. Introduction

Effective human resource management (HRM) is a decisive factor for the overall effective management and development of industrial enterprises. Therefore, a number of scientific publications are devoted to this issues. Some of them explore the human resources (HR) in the knowledge triangle and the development of the Bulgarian economy, others focus on the challenges of human resources in the digital age, and third explore the possibilities for increasing the qualification [1, 2, 3]. In general, the studies conducted at the present time in this area are very limited in the specialized literature, lacking extensive and in-depth analyses, which is a prerequisite for studying the role of digitalisation in the activities of Management of human resources.

The analyses of the company reality in Bulgaria, at this stage, show that the wider use of digital technologies in the management of human resources is rather a privilege and practice of foreign and high-tech companies, but increasingly Enterprises are in the process of developing a strategy for digital transformation of the human resources management system or have introduced some form of Elearning. In this regard, it is a challenge for the authors to explore the actual state of the management system of the most important resources in industrial enterprises, which activities have been digitized and what are the main difficulties and problems of digital Transformation of HR activities.

2. Exposition
The dynamic development of technology in the modern digital world leads to changes in the business models, which determines a radical change in the management of human resources. We are witnessing a continuous change of the function of the specialists in Human resources management, depending on the entry and implementation of the new technologies. In modern conditions it is necessary for them to know perfectly the business of the enterprise, with a view to establishing the relationship between their own work and the stakeholders in such a way as to add value to the business by retaining talents, leadership and organisation of work. In the article "5 Human Resources Models Every HR Practitioner Should Know", the author argues the role of human resources in business, indicating 5 practical models explaining how the HR adds value to the business and vice versa, how the business affects the Human resources [4, 13]. Our position on the models discussed in the article is that the popular HR value chain is the most clearly expressed the HR-business link shown in Figure 1. According to him, everything that is done in the HR field can be divided into two categories: HRM activities and HRM outcomes.

![HR value chain](image)

**Figure 1. HR value chain**

The more companies focus on measuring the effectiveness of HR activities, the more it will reduce the cost of carrying them out [12]. The focus should be on the results of HR activities, which will lead to the fulfillment of company goals. Of interest is the feedback – successful companies have always more effective HRM, as invest more in HR programs, including HR Software and learning & development opportunities for their people [6, 13]. The digitalization of HR activities was investigated by the world renowned specialist in HR theories and practice Prof. Dave Ulrich. It justifies its assertion that HR practices respond to changing external conditions (e.g. social, technological or political trends) and external stakeholders. Shifting the logic of the HR activity "out" requires HR professionals to truly understand the business of the organization so that they can make the connection between their own work and the added value for the stakeholders. The main conclusion that he does is that digitalization in HR work will not replace human judgement and ability in terms of talent, leadership and organization that are needed for success on the market [5,12].
The literature review on the issues in question gives us the opportunity to discover a number of researchers on the role of HRM in the digital environment, the amendment of HRM activities, in order to be resilient companies in the digital age, the requirements for individual and Organisational competencies in the new conditions as well as the mechanisms of cooperation between "human beings" and "smart Things" [6,7,8].

The overview of the specialized Bulgarian sources shows that there are no in-depth analyses and studies of the problems related to the digital transformation of human resources management, but rather separate articles from HR consultants and HR experts [9, 10,11].

They explain the steps of the digital transformation of HR activities, the attitudes of managers for its implementation, as well as the competitive advantages that companies will have after digitization of HR activities. In a synthesized form, these are the main highlights of the review of the specialized literature on the digitalization of HR activities.

2.1 Methodology of the study

The survey was carried out in thirty eight industrial enterprises in Bulgaria in the period September 2019 – February 2020 year. Of these, fourteen are large enterprises, and twenty-two are medium-sized enterprises. The nineteen of the enterprises are foreign management (Germany, France, Austria, Sweden, Denmark, Italy, Belgium, etc.) and nineteen are Bulgarian enterprises. The companies surveyed employ 9873 people. The survey participants were 184 HR managers and specialists. Of these, 92 work in foreign management companies. Conditionally denote these participants in the study with Group A. The other 92 respondents are HR managers and specialists in Bulgarian industrial enterprises. These are the group B participants.

The survey covers five phases: the development of surveys; Conducting inquiry; HR activities; Determining the degree of digitalization of HR activities; conducting structured interviews. The questionnaire sets out the issues related to the evaluation of the digitalization of 15 HR activities, and a scale is made to assess the degree of their digitisation from 1 to 5, as follows: 1 – fully digitised; 2 – largely digitalised; 3 – There are elements of digitization; 4-the initial degree digitized; 5-unitalised. The participants assess the extent to which each HR activity is digitized by indicating the corresponding degree in the range from 1 to 5. As a result, the average value of the indicator is calculated and the activity is performed. The survey is conducted for the participants of Group A and Group B. Fifteen human resource management activities can be grouped into 4 groups: routine activities (12, 13,14 and 15); Training (6.7 and 8); Organization of Continuity and development (9 and 10); Recruitment and selection of human resources (1, 2,3, 4 and 5); The main idea is to establish and compare the degree of digitalization of HR activities in the two groups of enterprises. The interviews were conducted with 20 HR managers, of which 10 from Group A and 10 from group B. The only question is related to the problems and difficulties encountered in the digital transformation of human resources management.

2.2 Results of the study

As a result of the survey, we received the following results for Group A and group B participants (table 1). HR managers and specialists from industrial enterprises with foreign management assess the degree of digitization of human resources management activities as follows:

- routine activities related to the preparation of reports, missions, holidays, organization of meetings with the shellfish are in the scale between "fully digitised" and "largely digitized";
- activities relating to the human resources training process are also in the scale between ' fully digitised ' and ' largely digitised ';
- the activities of the Organization of continuity and development fall within the scale between ' largely digitised ' and ' there are elements of digitisation ';
- recruitment and selection of human resources are also on the scale between "largely digitised" and "there are elements of digitisation".

The analysis of the results obtained from group B participants ' questionnaires shows that:

- routine activities related to the formation of missions, leave, organizing meetings with the management are in the scale between "in the initial degree digitized" and "non-italised";
the activities relating to the human resources training process are also in the scale between 'largely digitised' and 'there are elements of digitisation';
the activities of the Organization of continuity and development fall within the scale between "C" there are elements of digitization "and" in the initial degree digitised ";
recruitment and selection of human resources are also in the scale between "C" there are elements of digitization "and" in the initial degree digitised ";
the activities of the Organization of continuity and development fall within the scale between "C" there are elements of digitization "and" in the initial degree digitised ";
recruitment and selection of human resources are also in the scale between "C" there are elements of digitization "and" in the initial degree digitised ".

Table 1. Results of the survey

| №  | HR activities                                                                 | Group A Average | Ranking | Group B Average | Ranking |
|----|-------------------------------------------------------------------------------|----------------|---------|----------------|---------|
| 1. | Post Job vacancies across multiple sources with one click                      | 2,26           | 10      | 3,45           | 8       |
| 2. | Schedule for interviews                                                        | 2,42           | 11      | 3,28           | 6       |
| 3. | Access to the applicant's profile for all participants in the recruitment campaign | 2,12           | 9       | 3,87           | 9       |
| 4. | Automatic notification of managers and colleagues about the emergence of new staff recruitment | 2,92           | 15      | 4,48           | 12      |
| 5. | Organizing meetings of the employee with the manager and his automatic planning | 2,52           | 13      | 4,62           | 13      |
| 6. | Open access of managers to the training desires of each employee              | 1,26           | 5       | 2,34           | 1       |
| 7. | The ability to quickly create and view a training schedule for each employee  | 1,28           | 6       | 2,45           | 2       |
| 8. | Access to feedback on results in order to further plan employee training      | 1,34           | 7       | 2,84           | 3       |
| 9. | Registration of the platform for career desires and achievements of employees  | 2,43           | 12      | 3,26           | 5       |
| 10.| Automatic update of the Personnel reserve catalogue                           | 2,68           | 14      | 3,84           | 7       |
| 11.| Document management System                                                     | 1,82           | 8       | 4,27           | 10      |
| 12.| Organizing meetings with the management                                       | 1,14           | 2       | 4,42           | 11      |
| 13.| Request and confirmation of leave                                            | 1,18           | 3       | 4,68           | 14      |
| 14.| Shaping travel missions                                                       | 1,20           | 4       | 4,86           | 15      |
| 15.| Shaping of reports                                                           | 1,12           | 1       | 3,25           | 4       |

The ranking of activities, depending on the average assessment of their digitalization, shows that in Group A, the first places are occupied by routine activities related to the preparation of reports, missions, leaves, meetings, followed by training activities, Development and recruitment and selection of human resources.

In group B, the first places are training activities, followed by routine activities, recruitment and selection and organization of continuity and development.

The ranking of activities, depending on the average assessment of their digitalization, shows that in Group A, the first places are occupied by routine activities related to the preparation of reports, missions, leaves, meetings, followed by training activities, Development and recruitment and selection of human resources.

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In group B, the first places are training activities, followed by routine activities, recruitment and selection and organization of continuity and development.

The analysis of the results of the study shows the relatively large difference in the assessments of the degree of digitalization of HR activities in the two groups, which we will summarize in the conclusions of the survey.

2.3 Conclusions from the study

- In industrial enterprises with foreign management, most of the activities related to the management of human resources are largely digitized and fully digitised. The activities of organization of continuity and development are largely digitized and there are elements of digitization.
- In the Bulgarian industrial enterprises the routine activities are in the initial degree of digitization and non-unitalised; The recruitment and selection activities, the organization of continuity and development are in the initial stage digitised and have elements of digitisation; The training activities are largely digitised.
- The comparative analysis of the results between the two groups of participants shows that the digital transformation of human resources management can be mainly spoken in industrial enterprises with foreign management. Still, in the Bulgarian industrial enterprises, in large part digital are only activities related to the training of human resources. Other activity groups have initial digitization or digitization elements.
- In a summarized and synthesized form, the conclusions of the analysis of the results of the interviews conducted on the difficulties and problems in the digital transformation of human resources management are as follows:
  - In some of the Bulgarian industrial enterprises there is still mindset of underestimation of HR activities and in a relatively small part of them – 3% has developed a strategy for the Digitalization of human resources management.
  - In the enterprises of both groups it is difficult to find creative, innovative and emotionally intelligent workers. Of interest is the response of HR managers that they are easier to discover with technological skills than with "soft skills" – criticality, innovativeness, teamwork skills, creativity and adaptability to the digital environment.

The conclusions of the survey give us the opportunity to summarize that in Bulgaria the digitalization of HR activities is still in its initial phase. It is therefore necessary to start from the development of a digital transformation strategy for HRM and a programme for its implementation. The practical result of the survey is that we have attempted to direct the concrete steps for digitization to the four main groups of activities, namely routine activities; Recruitment and selection; Training; Organization of continuity and development.

For this purpose it is necessary to select the teams with the necessary qualities – technological and soft skills. It is precisely at this initial stage of digital transformation of human resources management that the leading role of HR managers and specialists in industrial enterprises is of paramount importance.

3. Conclusion

In the report, we have tried to draw attention to the results of the survey, which show that serious efforts are needed in industrial enterprises on the digitisation of HR activities, so that they can gain competitive advantages in three Directions:

- digital Workplace – it will provide freedom for workers to carry out their work tasks, not only from the office but also from home or their preferred place. In this way, labor reality can become an exciting experience, as a result of which employees will be more efficient and creative;
- digital Learning – it must be carried out constantly, in relation to the changing conditions in various forms, so that it is highly effective and provides concrete results for the company;
- digital Talent – it is assumed that the modern digital environment will contribute to attracting and especially to the retention of talents in industrial enterprises, as well as to providing a positive experience for employees.

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