

Industry 4.0 brings changes in human resources

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Abstract. Industry era 4.0 is an era of robotization that assumes the unification and automation of processes in the personnel area: data collection, information analysis, evaluation, training, performance enhancement and decision making. The aim of the paper is to point out the upcoming trend in the era of industry 4.0, of which employees are an essential part. It focuses on the perception of implementation of changes from the perspective of employees and the need for systematic work of HR professionals. The paper focuses on identifying the types of changes that are most often implemented in organizations and also the satisfaction of employees with the impact of the introduced changes. We start from the fact that changes contribute to the future of an ever-developing organization. The more people are connected to change, the easier it is to encourage their positive engagement.

1 Introduction

Given the rapidly changing nature of business, it is necessary to accept the fact of the need to adopt and introduce changes in the organization. Change management is becoming an essential part of the human resources as organizations need to keep up with the new, emerging era of industrial digitization. Industry era 4.0 becomes an era of robotization. In the area of human resources, it assumes the unification and automation of the processes of data collection, information analysis, evaluation, education, performance improvement and decision making.

Industry 4.0 creates a number of new opportunities for organizations in the personnel field. It has an overall impact on human resource development, labor productivity growth, opportunities for creating new industries, shifting different tasks from man to machines and robots. These are tasks: routine, repetitive, dangerous or health-threatening. The combination of human potential and computer algorithms opens the way for the emergence of new industries of the future.

The general transformation of the global world creates new opportunities for many countries. For example, the role of some of the constraints on the labor market, such as geographical location, underdevelopment and other similar activities, is declining.[1]

In relation to the current need to apply changes in organizations, the article focuses on the process of implementing changes from the perspective of employees. It monitors how people perceive the change process in an organization, how communication and overall satisfaction with the outcome of changes take place.

2 Changes in industry 4.0 in human resources

Industry 4.0 is characterized by a changing environment. According to Lasi [2], organizational structure is characterized rather by decentralization, empowerment of individuals, fewer formal rules, horizontal communication and teamwork, which is a more appropriate approach for an environment full of innovation and change. Transformation and acceptance of industry 4.0 in personnel is essential. It is not possible to rely solely on the traditional approach. This means a new focus on the processes and employees themselves. It is a challenge for the entire company management. In terms of human resources needed targeted preparation. The following facts should be taken into account.[3]

1. Human resources specialists must be able to identify the skills needed for the sector in which their organization is active. At the same time, they must define the new skills that the 4.0 era can bring.
2. HR needs to be more digitally focused. HR specialists need to keep up with technology trends to stay ahead of the competition.
3. Use of interconnection and integration. Active reform of the way of communication with internal and external clients. Focus on new, modern and efficient communication tools.
4. Retraining. In addition to managing their own changes, the Human Resources Department will also have to cope with the challenge of retraining other areas within the organization.

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Personnel professionals face many challenges in the 4.0 industry. These are in particular: large amounts of data handling, rapid onset of change, new business and personnel models and "intelligent services" that enable digital tools. The basic determinant of managing organizational change is the experience of managers who are beneficiaries of change. The amount of change these managers make is related to the size of the organizational changes they make. Experience from the success of previous changes in each organization has been positively influenced and supported by this relationship. [4]

According to experts, the development of industry 4.0 will bring many problems and risks. For example, adapting employees to new conditions and high levels of technological change, or risking the extinction of existing occupations, including the most qualified [5]. Sommer L. [6] points out that strong pressure on innovation could be particularly detrimental to small and medium-sized enterprises, and the smaller the companies, the greater the risk. Changes may result in an increased share of part-time work with flexible working hours in several companies at the same time. Labor-law relations will be more based on outsourcing the workforce to selected positions and creating new internal structures. [7]

In November 2017, McKinsey's report emphasizes that nearly 800 million jobs are at risk as a result of the introduction of new technologies. This huge change will push for automating work and eliminating low value-added jobs. However, the implementation of these technologies creates a lack of staff skills. The human resources department must decide whether it is beneficial for companies to acquire the necessary skills in the labor market or to train old employees from within. [8]

Some limitations and concerns about the increasing tendency to use robotics and artificial intelligence are causing fear in humans. Fear of more massive job cuts, job loss and security. On the other hand, it should be noted that in countries such as Japan or Germany, ie the countries that are robotics leaders, they have had the lowest unemployment rate in the last twenty-five years. [9] Slovakia also appears to be a country with an increasing tendency to use digitization and robotization in this area, while the level of unemployment has been decreasing in recent years. [10]

Manpower Group has focused on answering questions about the impact of technology on business in the coming years. [11] It focused on 18,000 employees from 43 countries. The results in the report entitled "The Skills Generation" showed a new direction that pointed out that the workforce must come with the right skills and adaptability. 60% of respondents pointed out the importance of investing in internal training to maintain skills 'fresh', in order not to create a large gap between existing and required skills. Another interesting fact has shown that 45% of current positions can be threatened in the next two years by the automation of some processes and operations.

For organizations, Industry 4.0 is a challenge in many areas. One of the first processes that need to be prepared in an organization is to inform employees about the need for new changes. The changes that will be necessary for the organization to be competitive in the market. Changes contribute to the future of an ever-growing organization. The more people are connected to change, the easier it is to encourage their positive engagement. Therefore, it is important that organizations involve their employees as soon as possible in the process of planned change. People's fear of something unknown creates a problem visualizing the outcome of the change. It is therefore useful for the management of the organization to be able to illustrate what the change will mean.

2.1 Model of implementing changes in the organization

According to surveys, 40% of Slovak companies are already taking steps towards digital transformation. On the one hand, the results of the survey speak of increasing the innovation potential of companies and a positive shift in the availability of information. On the other hand, they also talk about insufficient conditions for the education and development of workers, or the need to change the role of management in the transformation process. [12] The success and failure of the planned change is largely the responsibility of the leaders and managers whose task is to create a suitable environment for achieving the goal. [13] Through the use of various methods of developing capabilities and skills of employees are able to adapt well to new challenges in the period after the introduction of changes. [14]

An important role in promoting the successful implementation of the 4.0 sector is the active cooperation of managers with HR experts. The link with the different sectors of the organization is essential in ensuring good implementation of the new organizational models. HR is considered essential in promoting the improvement of operational processes in companies. This is also confirmed by a study [15], that highlights the importance of human resource flexibility and its impact on organizational innovation and culture.

Although Slovak companies are interested in information and exchange of experience, most of them lack the confidence and determination to gradually set up their activities to new procedures. It is therefore important to talk about what approach to take and what the first steps should be.

All changes that are made to an organization affect employees as carriers and implementers of change. The task of management in period 4.0 is to gradually and purposefully prepare employees for the necessary changes. The introduction of new procedures into the working stereotype cannot be accidental or rapid. It has to respect many factors, such as the effect of the original procedure, staff attitudes, the timing of change implementation or the expected difficulty of implementation.

The need for change in organization is broadly triggered by two basic groups of incentives that are based on internal and external stimuli. Internal incentives changes are within the organization. These include, for example, a decrease in the

quality and quantity of performance, changes in key employees, changes in opinions and attitudes in the group, dissatisfaction with evaluation and evaluation, changes in the division of powers, changes in organizational culture. The basic internal stimulus of organizational change is the gradual development of organizational culture. External incentives contain external environmental factors that affect the organization. These include the competitive environment, business partners, customers, the economic, political, cultural, social and technological macro environment. Changes made on the basis of external incentives are essential in order to maintain the organization's position in a competitive market. Both internal and external incentives are closely interconnected in view of organizational changes related to Industry 4.0.

Creating the need for change in an organization is based on the requirement of innovation and maintaining its position in a competitive environment. This implies an active approach and optimal timing of change, taking into account the internal situation as well as external environment pressures. The success of introducing new procedures is primarily based on a change of attitude, which is a complex process. The goal of change cannot be just the current short-term change. For a long-term change of attitudes, it is necessary to use a targeted model of introducing changes. A model that takes into account the position of the organization as well as the needs of employees. Lewin's three-phase sequential change management model is based on the fact that the forces that lead to change continue to affect the organization as they respond to dynamics and change from a societal perspective.

This model examines two areas of human attitudes that occur during the implementation of any change in the organization. The first area is the drivers that support change. The second area is resistance forces that reduce the likelihood of acceptance of change. The forces of resistance consist mainly of emotional and psychological barriers. The essence of the Lewin model is based on the assumption that in managing change processes, an organization must "relax" its current state to a neutral position. Old behavior can be subdued and new behavior can be successfully accepted. The change should be made by using the driving forces and minimizing the resistance forces.[16]

The principles of the Lewin model are applicable at various levels of change in the enterprise, including the introduction of changes related to industry 4.0. The implementation has three important phases. The first phase is perceived as the most difficult. This is referred to as defrosting. It is based on the fact that employees have developed addictive practices that are increasingly fixed over time. Decision making and performance becomes routine and simple. This creates a high degree of resistance to everything new, regardless of whether they are positive or negative changes. Accompanying phenomena are tension, anxiety, fear, fear, passivity or open aggression. The aim is to gradually unblock old habits and place less emphasis on remuneration. Use of open communication, based on clarification and consultation. The aim of communication is to focus on: the reasons why change is necessary, what happens if there is no change, what is expected if there is a change. Employees have the opportunity to realize the need for change.

The second phase is already the actual implementation of change. It is the core of this model. Employees are gradually using new procedures to verify the correctness and effectiveness of the change. Managers are in the role of facilitators. They seek to facilitate the implementation of new approaches. They use positive elements of motivation and encouragement. The aim is to: motivate at a weaker performance, clarify ambiguities, encourage, adapt to change. It is a transition to a new status, which is realized through new forms of behavior, values and attitudes, the adoption of new organizational structures and working practices.

At a time when an employee achieves some performance through new procedures, the third stage begins. Freezing phase. The aim is to stabilize and strengthen the required workflows through motivation tools. Again, it is essential to create a sense of security and satisfaction, backed by favorable results. Freezing means stabilizing the organization in a new equilibrium state. This phase is very demanding in terms of time and implementation. This model can be applied not only from the internal perspective of change management for employees, it is also effective from the general perspective of the organization.

3 Perception of changes in the organization by employees

In terms of personality structure, more than half of employees prefer a stable working environment. They are well versed in it, they have enough information, enough time and space to communicate about the possibilities of solving work tasks. They prefer situations in which they are not exposed to risk or where they may influence the risk.[17] For this reason, changes in the organization and the working group in the first phase often bring about a defensive attitude of employees. Refusal may have a hidden or manifested course. A targeted approach to analyzing the status quo and implementing change is important.

Changes are generally perceived as disrupting established organizational structures. They change or take away the powers and responsibilities of employees or delegate them to others. Changes bring new responsibilities to employees that they did not have before. Organizational relations of superiority and subordination are changing. Such situations give rise to concern and disorientation. Gradually, interest in work is lost. This rejection of the new state is associated with anger and causes confusion. The most common reasons for resistance to change can be divided into three basic groups:

1. Lack of communication: lack of information on the need for change, inadequate imposition of change, predominance of informal communication channels, misunderstanding of the purpose of change.
2. Employee individuality: low self-confidence to handle new practices, fear of incapacity and failure, demolition of established practices, insecurity, preference for work and relationship stability, better management of routine and established practices, low tolerance of change.

- Social status in the group: weakening power, fear of losing status, job insecurity, fear of the unknown, self-interest in maintaining the existing situation, lack of identification with change.

The general preparedness of employees for change is related to their past experience. Whether the results of previous changes were positive or negative. Changes in people's consciousness go through four phases. The first is the phase of satisfaction, when there is no need for change and satisfaction with the current situation prevails. At this stage it is necessary to present an interesting vision of the future state of the organization. This is followed by a phase of anxiety and fear that is related to incoming changes and employees are beginning to feel a negative attitude. They deny that they should change. At this stage it is necessary to provide enough information to support change, to listen and to obtain the necessary information. If employees accept the need for change, the next phase begins - confusion. The problem is how to make the change. The plan and methodology of the procedure need to be clearly presented. Identifying with the process and making changes is the next phase - acceptance. Employees can be presented with other possibilities of positive changes. If employees are already able to accept change, they are able to implement change and adapt to it. The degree of organization's readiness for change reflects employees' willingness to accept change and work towards its implementation.[18] Employees in this respect can be divided into three groups.

- open to change, with a high degree of flexibility. They come with proposals and positively accept new approaches. They perceive change as a challenge and a means against stereotype.
- reasonably accepting the changes. The resistance phase does not last long, they are open to open communication. If appropriate arguments are chosen, they adapt quickly to change.
- favor stability, the ability to accept change is very low. The stereotype at work brings them certainty and therefore they are not willing to give up routine. The resistance phase lasts quite a long time.

Personal perception of employees' changes and their willingness to adapt will determine whether the new system will succeed or fail [19]. In order for employees to be ready to accept change, it is important to point out its importance in closing the gap between the current and the desired situation. This requires considerable effort to manage employees' attitudes to the expected change and to foster the sense that the organization supports innovation. [20]

4 How employees perceive change in organizations

The aim of the survey was to point out the perception of changes in the organization by employees. Employees are in the front line affected by change and transformation, whether in a positive or negative direction. Their insight into the change implementation process in an organization can help to better set up the entire change management process in the context of industry 4.0. Respondents (72 respondents) were employees of medium-sized companies, with no specific orientation. At least 2 years in the company. Data were collected through a structured questionnaire in both written and electronic form. The questions in the questionnaire were aimed at identifying the types of changes that are most common in organizations. What communication channel do organizations choose when communicating change to employees and employee satisfaction with the impact of implemented changes in the organization.

One of the monitored areas was their perception of the current situation in the company from the point of view of the changes made in recent years. The results show that employees perceive changes in the organization differently. In each group there are employees who are oriented towards change but also against change.



Fig. 1. Types of changes in the organization in %

Figure 1 shows that the changes most frequently registered by employees concerned changes in workload (66.6%) and changes in the composition of the working group (48.6%). It is possible that these changes influence each other. According to respondents, in their organizations, new jobs do not arise as a result of the implemented changes. Nor do they see a direct link to the abolition of certain jobs. Rather, they attribute this to changes in the organizational structure and changes

in the job description. According to respondents, the results of the changes also relate to changes in working processes (38.8%) and consequently changes in the way of management approach (31.9%), both from the direct management and the overall mood of the company. In connection with the advent of industry 4.0, as shown by the trends, it is possible to assume a higher incidence of changes related to the emergence of new and at the same time possible termination of some jobs.

Experience with implementing changes shows the importance of choosing how to communicate with employees about change planning, goals and vision of outcome. The survey shows (Figure 2) that organizations prefer their own, direct communication with employees over external collaboration to inform about changes. Although external collaboration is common in establishing change implementation processes, the survey shows that employees are generally communicated with employees through internal channels - the management of the organization (56.9%) and the direct supervisor, the manager (51.3%). Although the implementation of changes is directly related to the personnel area and therefore to the HR department, the communication line on the preparation of changes is used only in 26.3%. Information through HR departments is provided mainly in connection with adjustments to work and subsequent interpersonal changes in groups. Also interesting is the combination used to communicate about changes. The management of the organization focuses mainly on the communication of the vision and the expected outcome of the changes together with the time data. Subsequently, direct supervisors or manager specialists communicate about the changes. Their role is to communicate more closely and to explain the procedure and concrete expectations. Scheduling changes is set to shorter intervals. The manager cooperates more closely with the HR department, precisely because of dissatisfaction, fear or even resistance to change. HR specialists communicate change from the perspective of the positive impact of changes on employees.

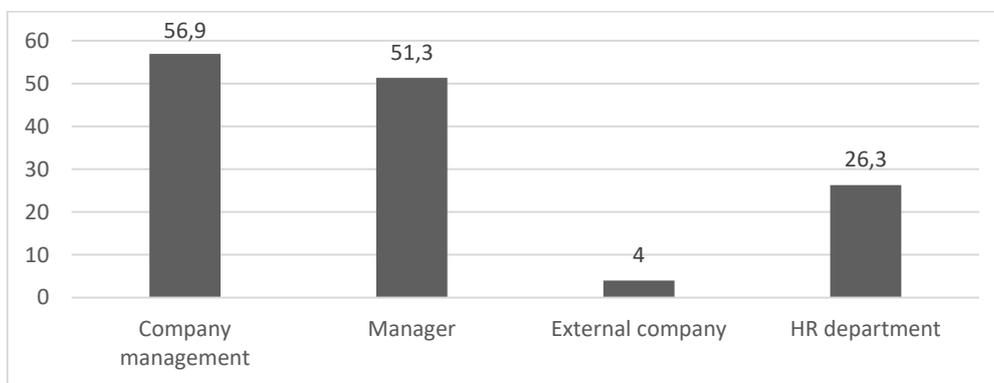


Fig. 2. Communicating change in organization to employees in %

Regarding the perception of the introduction of changes, it was mentioned that employees are initially cautious about changing settings. Feelings of fear of the unknown arise, especially from the impact of changes on their position in the organization. A feeling of work, social but also psychological insecurity arises. Respondents to the questions, which raised the most concerns during the planning and implementation of the changes, responded differently. Most were the fear of losing a job, which was associated with many other aspects. Based on the responses, the order of concern most perceived by employees when planning and implementing changes can be listed (Figure 3). The notion of change and its impact has a highly subjective charge. Prolonged exposure to a negative notion of change can create resistance and a negative attitude to the new situation, without adequate causes.

Concerns related to implementing changes in the organization can be divided into three categories. Working: loss of job, lack of new procedures, loss of responsibilities and competences, difficulty finding a suitable job, new superior. Social: loss of teammates, non-inclusion, lack of information. Personality: sense of uselessness, time pressure. It is clear from the results that employees are most worried that they will not be able to manage the professional side of organizational changes.

Order	Fears of change
1.	Loss of job
2.	Failure to master new procedures
3.	Loss of responsibilities and competences
4.	Problem finding a suitable job
5.	Loss of colleagues from the team
6.	New superior
7.	Non-inclusion in the team
8.	Feeling useless

- 9. Time pressure
- 10. Lack of information

Fig. 3. Fears of change

When introducing changes related to 4.0, an increased level of concern can be expected. The reason is that in this context, employees see a greater risk of the entire reorganization of work processes and the risk of job loss. Appropriate communication for the initial elimination of resistance and fear plays an important role here.

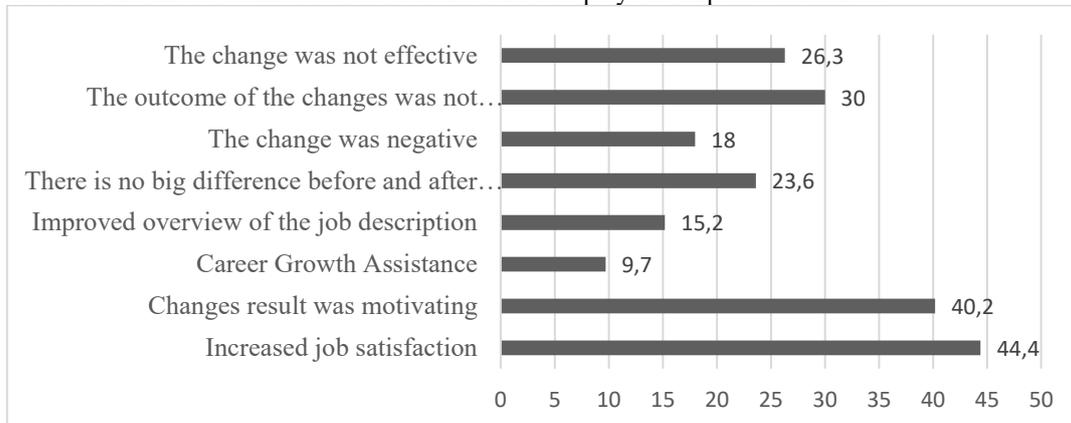


Fig. 4. Satisfaction with the impact of changes in the organization in %

Despite a cautious approach to change and overall concerns about the change process, respondents perceived the outcome quite positively. Figure 4 shows that, overall, 27.4% of employees evaluate the impact of changes in the organization effective. They perceive the changes as motivating (40.2%) and increasing their job satisfaction (44.4%). According to employees, the results of the changes had a positive impact on better transparency in their job description and overall work structure (15.2%). The positive impact of the changes also resulted in an improvement in career growth (9.7%). On the contrary, 24.8% of employees evaluated the negative impact of changes on work. They perceive changes in the organization as ineffective (26.3%) and consider the outcome of changes to be inadequate compared to expectations (30%). The change process had a negative effect on employees (18%). Neutral attitude with no significant differences before and after the changes was evaluated by 23.6%. The changes were assessed as unnecessary, insufficiently communicated and the overall effect was not significant.

Conclusion

Industry 4.0 has already started. More and more industries and work processes are being digitized and automated over time. It is important to adapt to this trend in order to maintain productivity growth and to enable organizations to respond quickly to environmental demands. Many organizations are already implementing new implementation strategies and systematic preparation for implementing the 4.0 related changes. Strengthening the capacity to accept change is essential throughout the organization. In terms of personnel, it affects all processes, from recruitment and daily operations to communication and remuneration systems [21]. In this context, many questions arise as to how these changes will affect our work and life. The answers can be different, but the position and tasks of the personnel area in organizations will certainly be different from the present.

The aim of the paper was to point out the upcoming trend in the era of industry 4.0, of which employees are an essential part. Targeted focus on employees is essential for the smooth implementation of emerging changes. It is necessary to know how employees perceive this situation, what they expect and what they are worried about. Targeted communication with employees should be a planned part of strategy 4.0.

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