

## **IMPACT OF COLLECTIVE INTELLIGENCE ON ENHANCING COMPANY MANAGEMENT**

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The war in Ukraine fundamentally changed people's lives and destinies. Many employees have been forced to leave the territories where fighting is and work remotely. With the forced format of remote work, the management of enterprises faces a number of management challenges (culture of presentism, lack of changes in management style, division of work groups, risk of employee isolation), the successful solution of which will ensure stability in the functioning of enterprises and mitigate the consequences for employees and enterprises.

The main task for managers is to organize the work of groups working remotely as effectively as groups working face-to-face. It can be achieved, among others, by expanding the capabilities of the intellectual ecosystem based on the concept of collective intelligence (CI). With collective intelligence, communities can perform tasks or solve problems more efficiently and effectively through collaboration and knowledge sharing [1, 2]. Such shared or group knowledge, arising from the collaboration and competition of many individuals, goes beyond the sum of individual intelligence into integrated collective intelligence.

This study aims to reveal how to improve the efficiency of company management through the perspective of collective intelligence.

Researchers believe collective intelligence emerges when local and distributed knowledge and skills are coordinated to achieve a collective (but not necessarily consensual) goal [1]. Variables that contribute to the manifestation of CI are split conditionally into two levels [3]. The first considers variables based on the interaction processes in the group (top to bottom), and the other – variables relate to the characteristics of group members (bottom to top). The top-down analysis focuses mainly on interaction variables between group members, such as task duration, variety of responses provided, time spent seeking consensus, or group heterogeneity [4]. At the bottom level, the most often analyzed variables are gender,

cognitive diversity, emotional intelligence, social sensitivity, and individual intelligence [3, 5].

The empirical basis of the study is a narrative expert interview conducted in January 2023 with managers of various levels of private and public enterprises operating in the fields of education, science, and information technology. The interview questions related to the changes that occurred with the employees, the actions of the managers to regulate these changes, the application of CI conception in managerial practice, and how working together in groups offers benefits and challenges for handling significant issues. The interview guide consisted of 15 open-ended questions that required the respondent's loose narrative.

The results have revealed that applying the CI technologies has shown fruitful results in increasing the efficiency of personnel activity. Further, this study demonstrated that creating the right teams to perform the required tasks (groups consisting of personnel with the desired set of skills, interests, and required personalities) has proved effective in all examined companies. It corresponds with the findings [3], which indicate improving the efficiency of group work with an increase in the competence of the group members but insist that increasing the number of distinguished leaders does not correlate positively with group work efficiency and sometimes even reduces it.

We also conclude that members of remote teams may have more flexibility when it comes to working hours during the day, which may require some extra coordination but will leave more room for those who can do a particular job. Thus, our research supports the idea that where employees work is less important than how the work is done and who does it.

Besides, failure to consider the so-called emotional intelligence of each team member significantly impacts how the team works as a whole and, accordingly, the result of team activities. These variables are self-management, self-awareness, relationship management, and social awareness.

Additionally, the findings of this study show that creating work policies and approaches that promote collective intelligence with remote teams requires some out-of-the-box thinking from leaders. It is typical and understandable for managers to focus on the skill sets of individual employees, but building remote teams requires a broader view.

This research contributes to the existing knowledge about teleworking and approaches to enhance it. Furthermore, the study recognizes CI as an effective tool for managing remote teams to solve problems and provide reliable performance.

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## PREREQUISITES AND FEATURES OF THE IMPLEMENTATION OF INDUSTRY 4.0 TECHNOLOGIES

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At the beginning of the 21st century, humanity began to experience a new industrial revolution, which is known as Industry 4.0. This has led to significant changes in the ways of organizing social production and satisfying consumer needs, as the new technological challenges of Industry 4.0 are fundamental.

New technologies play an increasingly important role in our lives, and their rapid introduction creates increased competition [3-5]. As a result, manufacturers must change their strategy and management of economic processes to produce innovations, create new values, and implement them in production. The peculiarity of this revolution is that information technologies are becoming more and more widespread in various spheres of social life. Therefore, all subjects of the economy need to continue to develop new technologies and introduce them into production.