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ARTIFICIAL INTELLIGENCE IN DISTRIBUTED TEAMS: ENHANCING COMMUNICATION AND COORDINATION IN GLOBAL PROJECT ENVIRONMENTS

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Abstract
This article reviews current research on human -AI teaming, AI- mediated communication, and the use of chatbots to support distributed teams. Key mechanisms for improving team efficiency are identified, as well as risks associated with privacy, trust, and responsibility allocation. Practical recommendations for implementing AI in project management in global organizational environments are formulated.

Keywords: Distributed teams, artificial intelligence, chatbots, team coordination, communication, global projects, human -AI teaming.

Introduction

Scientific novelty. This article offers a comprehensive analysis of the role of AI as a mediator of communication and coordination in distributed teams, systematizes mechanisms for improving efficiency, and formulates practical recommendations for the responsible implementation of technologies in global project environments.

Since 2020, distributed work has become a dominant trend: in the IT sector, the share of such teams exceeds 70%. However, working across time zones, cultures, and languages poses significant challenges: asynchronous interactions, loss of context, and a decrease in collective effectiveness (by 17–34%). Traditional digital tools (email, instant messaging) often fail to ensure the necessary knowledge synchronization when tasks are highly complex. Artificial intelligence

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(AI) is becoming a key tool for supporting communication in distributed teams, offering the following benefits:

- automatic summarization of discussions and intelligent analytics improve collaborative decision-making;
- interaction pattern analysis improves visibility of communication and task status;
- neural network translation systems effectively reduce language barriers;
- the introduction of AI assistants (integrated into MS Teams, Slack, Jira) formalizes and simplifies asynchronous interaction.

Despite the obvious benefits, AI implementation carries significant risks:

- algorithm errors can undermine trust in the system and colleagues;- those who are better at using new AI tools gain an advantage;
- there are growing concerns about digital surveillance and the privacy of data analyzed by AI.

The mere presence of AI systems does not guarantee effectiveness. Algorithmic transparency, ethical design, and proper organizational integration are crucial to success. Therefore, analyzing the role of AI, its benefits, and limitations is critical to managing modern global project environments.

The concept of human -AI teaming views artificial intelligence not as a tool, but as a full-fledged participant in team activities, influencing coordination, role distribution, and collective decision-making [1]. Scientific research has shown that AI can act as:

- an analytical partner providing alternative points of view and reducing cognitive load [2];
- an organizational coordinator who stabilizes work processes and the pace of communication [3];
- a participant who forms team knowledge by recording and structuring accumulated experience [4].

Moreover, the effectiveness of human-AI interaction depends on the level of trust calibration: both excessive trust in algorithms and mistrust lead to coordination errors [5]. The explainability of AI recommendations is a crucial factor, as unclear or opaque conclusions reduce the quality of team collaboration .

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It has also been established that the implementation of AI changes the distribution of power and responsibility within a team: employees with higher AI literacy gain greater influence over decision-making [6]. This requires a rethinking of organizational rules and ethical norms related to autonomy and accountability in collaborative work.

Thus, human -AI teaming opens up opportunities for increased group effectiveness, but requires thoughtful management of the dynamics of trust, roles, and communication within the team.

The use of AI as a communication mediator aims to improve the quality of information exchange in distributed teams through the automatic interpretation and structuring of messages. Research suggests that such systems reduce cognitive load, eliminate comprehension delays, and make communication more accessible and consistent [7, 8].

Key mechanisms of AI- mediated communication include:

- automatic summarization of meetings and correspondence, preventing loss of context during asynchronous interaction;
- semantic filtering and routing of information, which reduces the number of irrelevant distractions;
- multilingual communication using neural network translators, reducing the influence of cultural barriers;
- Maintaining visibility of participants' contributions, which promotes engagement and coordination.

However, AI intervention in the communication process can lead to distorted meaning, decreased trust due to inaccurate recommendations, and risks associated with monitoring and analysis of messages. Scientific literature emphasizes that the successful integration of AI communications requires transparency of algorithms and explainability of filtering processes [9].

Thus, AI has the potential to improve communication efficiency in distributed teams, but it requires careful design that takes into account trust, privacy, and the social aspects of organizational interaction.

AI systems are increasingly being used in distributed teams to continuously analyze communication and coordination, identifying dysfunctions in collaboration and proactively suggesting corrective actions. Research projects

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show that automated monitoring facilitates the early detection of delays, role conflicts, and decreased engagement, improving team coherence.

One of the promising areas is AI - coordination agents that can: diagnose gaps in task flows; initiate reminders and status requests; and adjust the order of actions depending on the current workload.

Field experiments show that team effectiveness increases when AI interventions are transparent and explainable, while resistance and decreased trust arise [10].

Table 1 - Key functions of AI monitoring and interventions

Function of the AI system	**Benefits for the team**	**Potential risks**
Analysis of communication patterns (social graphs, frequency, uniformity of participation)	Early detection of participant isolation and leader overload	A feeling of "supervision" with high transparency
Detecting the risks of task delays	Improving predictability and timing	Incorrect conclusions → false alarms
Automated reminders and notifications	Reducing the number of delinquencies	Notification overload
Redistribution of roles/tasks	Load optimization	Decreased sense of autonomy
Generating recommendations for improving interaction	Improving process consistency	Mistrust in the absence of explainability

Despite the advantages, the implementation of such systems requires clear privacy frameworks, access control to analytical data, and trust calibration mechanisms. Consequently, communication monitoring and active AI interventions can improve the resilience of team coordination, but only if designed responsibly and adhered to ethical principles.

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Chatbots integrated into corporate platforms (Slack , MS Teams , Jira) are a key application of AI to support distributed work. They provide immediate access to information, automate routine processes, and are essential for maintaining asynchronous interactions across time zones [11].

Chatbots perform a number of functions aimed at increasing team efficiency and engagement :

1. Operational query and structuring of project information (protocols, task statuses), which significantly reduces the time spent on data search.
2. Automatic reminders, task setting and deadline monitoring ensure stable coordination.
3. Support for onboarding new participants and knowledge transfer.
4. Filter notifications and route requests to the right experts, helping to reduce communication interruptions.
5. Increased engagement and reduced risk of isolation in remote teams.

Despite their effectiveness, poor quality chatbot responses or overloading them with notifications can lead to decreased trust and negative perceptions of AI. Successful implementation depends on two key factors: transparency of data processing principles and ethical design that considers the social and cultural context of team communication.

Chatbots are thus a powerful tool for improving coordination efficiency, but their implementation requires a responsible approach and continuous evaluation of user interactions.

AI contributes to improved team effectiveness in distributed project environments through its comprehensive impact on communication, coordination, collaborative decision-making, and knowledge management. According to empirical studies, the use of AI leads to faster task completion (up to 20–40%), a reduction in communication errors, and a more even distribution of workload among participants [3]. The key mechanisms by which AI influences effectiveness can be grouped as follows:

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Table 2 - Key mechanisms of AI influence on the effectiveness of distributed teams

Mechanism	Description of impact	Effect on the team
Automation of communication processes	Summarization, filtering, translation	Reducing cognitive load and misunderstandings
Dynamic coordination	Identifying delays, managing task flows	Accelerating project execution
Decision support	Data analysis, scenario modeling	Improving the quality of decisions
Team Process Analytics	Monitoring participation, identifying conflicts	Stabilizing communication and roles
Support for knowledge and learning	Onboarding, access to experience	Reducing adaptation time
Increasing engagement	Social and support functions of chatbots	Reduced insulation and fluidity

It's worth noting that the effectiveness of AI tools depends on the organization's technological maturity, the AI literacy of its employees, and the transparency of algorithmic recommendations, which influences user trust. Thus, AI acts as an organizational coordinator, analytical assistant, and communication mediator, laying the foundation for increased productivity in distributed teams.

Despite AI's significant potential to support communication and coordination, its use is fraught with organizational, social, and ethical-legal risks. Key concerns relate to user trust, the quality of interventions, and the impact of algorithmic monitoring on perceptions of autonomy and privacy.

Research shows that excessive automation can lead to a decrease in initiative, as employees begin to expect decisions from AI, experiencing "responsibility bias" [10]. Challenges also arise from algorithmic errors, which can increase cognitive load and create misunderstandings within the team.

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Table 3 - Key risks of using AI in distributed teams

Risk category	Description	Potential consequences
Trust and acceptance of technology	Lack of explainability of AI decisions	Declining effectiveness of collaborative decision making
Quality of algorithmic recommendations	Analysis and intervention errors	Conflicts, wrong actions
Privacy and surveillance	Analysis of employee communications and behavior	Stress, distortion of team self-organization
Digital divide	Different levels of AI literacy	Strengthening hierarchy and imbalance of influence
Degradation of skills	Transferring functions from humans to AI systems	Decline in competence and initiative

The scientific literature emphasizes that risks can be minimized by using the principles of transparent design, organizational regulation and the phased implementation of technologies, taking into account the cultural characteristics of teams [3].

To effectively use AI to support communication and coordination across distributed teams, organizations must consider not only technological aspects but also the social and organizational factors of adaptation. We have developed key recommendations:

1. Ensuring transparency and explainability of algorithms. Participants must understand why AI offers certain solutions: this helps build adequate trust.
2. Gradual implementation with pilot groups. This allows us to identify cultural barriers and calibrate AI intervention settings without the risk of widespread failure.
3. Developing AI literacy among employees. Training in interaction with AI reduces the digital divide and promotes a more equal distribution of roles.
4. Configure systems to suit the communication context. Notification frequency, automation level, and access to monitoring data should be tailored to the specific needs of the team.

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5. Establishing rules for the ethical use of data. Transparent monitoring, respect for privacy, and limited access to analytics reduce the effect of "digital surveillance".
6. Regularly assess the impact of AI on processes and the environment. It's important to monitor not only KPIs, but also engagement, trust, and psychological well-being.
7. Maintaining a balance between automation and employee autonomy. It is important to prevent the shift of responsibility to AI and support the development of human competencies.

Successful AI integration therefore requires a human-centered organizational design where technology enhances, rather than replaces, team processes.

In summary, AI can significantly improve the efficiency of distributed teams by reducing uncertainty, delays, and information gaps. The greatest potential lies in combining automated analytical and communication functions (especially chatbots) with human expertise and accountability. Successful implementation requires ethical consideration, sound change management, and transparent design of human-AI interactions.

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