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**The Influence of AI Tools on Stakeholder Communication Effectiveness in Agile Projects**

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## **Summary of Research Papers:**

### **Paper1: Artificial Intelligence and Project Management**

In 2024 a study by Felicetti and his team dives into how AI, especially generative tools, is changing the way that teams talk and work together in Agile projects. They looked at the research and talked to people in the field, discovering that AI helpers are making a real difference. These tools help to clear up confusion, get information to stakeholders faster, and whip up project reports and documentation at surprising speed and accuracy, making the whole process more transparent.

The researchers are of the opinion that their findings are based on people's current experiences and a limited slice of industry, so the results might not be universal. But the core message is clear: AI is proving to be a game changer for keeping communication smooth and stakeholders happy on agile teams. (1)

### **Paper2: Multi-Criteria Measurement of AI Support to Project Management**

In a 2023 study, Čančer and colleagues set out to create a practical framework for measuring how well AI tools support various project management tasks, from communication to keeping stakeholders in the loop. To build it they surveyed agile teams across different industries and used a structured decision making analysis to pinpoint where AI helps the most. What they discovered was pretty straightforward: the more a team embraces AI, the better their communication tends to be. They found that AI-powered dashboards and automated progress reports were the real start of the show, doing the heavy lifting to ensure stakeholders get consistent, timely updates.

The researchers noted that a small caveat since the survey was based on manager's personal impressions rather than hard performance numbers, the findings rely heavily on their perspective. Despite this the study successfully draws a clear, measurable line between using AI and having more effective communication, solidifying its role as a key tool for managing stakeholder relationships in Agile environments. (2)

### **Paper3: A Study of the Role of AI-Powered Chatbots in project Stakeholder Engagement**

Shifting the focus to a specific tool, a 2004 paper by Joshi investigates the real-world use of AI chatbots as go between for project teams and their stakeholders. By interviewing project managers and agile coaches who've put these chatbots to work, the study found that they significantly boost stakeholder satisfaction. The big wins come from giving people instant, self-service access to project data, task statuses, and key decisions, which effectively removes communication bottlenecks and speeds up response times for much tighter feedback loops.

However, it was not all perfect, the research also honestly points out that the chatbots sometimes stumbled when faced with complex or nuanced questions, revealing that their natural language understanding still has it's limits. Despite this Joshi's work provides solid, practical proof that these AI assistants are excellent at bridging the communication gap, enabling the kind of real-time, transparent dialogue that is essential for Agile projects to truly thrive. (3)

### **Paper 4: A Conceptual framework for Applying Artificial Intelligence in Project Management**

A 2021 paper by Auth and colleagues aims to build a conceptual framework for weaving AI into the very fabric of project management, including how teams communicate and engage with stakeholders. By reviewing existing research and speaking with professionals already testing AI tools, they developed a model showing that AI doesn't just automate grunt work, it enhances communication as well.

The study suggests that by handling routine status updates, flagging potential miscommunications before they become problems, and using predictive analytics to make decision making more transparent, AI acts as a powerful bridge that aligns technical teams with business stakeholders.

The authors are the first to admit their framework is a theoretical one, a starting point that still needs real world testing and validation. Nonetheless, it provides a crucial foundation, giving us the language and structure to understand how AI directly fuels better communication and, by extension, stronger Agile performance. (4)

### **Paper 5: Stakeholder Roles in Artificial Intelligence Projects**

In a 2022 study, Miller decided to look at the human side of the equation, investigating how the very roles of stakeholders and their communication habits evolve when AI enters the project management scene. By examining several real-world tech projects that use Agile frameworks, the research observed a fascinating shift: AI tools were turning stakeholders from passive recipients of information into active, engaged participants in the decision-making process.

A key driver was the use of AI powered analytics dashboards, which made project data so transparent that sparked more productive, cross functional conversations. Miller is careful to note that the study's focus was exclusively on tech companies, so the dynamic might play out differently in other fields.

Despite this, the work powerfully reinforces the idea that AI doesn't just speed up communication, it actively elevates stakeholder involvement, making them true partners in the Agile process. (5)

### **Paper 6: Industry/PMI Reports on Transforming Project Management with GenAI Innovation**

In a 2023 review, Taboada and his team took a step back to look at the collective evidence on how AI-driven assistants are reshaping collaboration and decision making within agile teams. By merging and studying findings from a range of empirical studies, they found that these AI tools are particularly good at fostering data driven decisions and helping distributed team members stay on the same page.

A major practical benefit was that they cut down on unnecessary meeting times and made communication more precise. The authors do offer a word of caution, pointing out that there's still a lack of long-term data and that many of the reported benefits rely on people's own accounts, which can be biased.

Despite these limitations, the paper makes a strong case that AI assistants are more than just convenient; they are actively streamlining communication and coordination in a way that leads to tangible gains in project's overall efficiency. (6)

### **Overall Summary:**

All the above studies point to the same conclusion: AI is really starting to prove its worth in helping Agile teams communicate and keep stakeholders involved.

The tools we are talking about such as smart chatbots and live dashboards are making a noticeable difference by getting the right information to the right people, faster and more clearly than before.

Now it is important to keep our feet on the ground, most of these evidences still comes from surveys and interviews, meaning it is based on what people feel is working rather than a stack of hard performance metrics. But even with that caveat, the collective message is hard to ignore. By bridging gaps between teams and breaking down information silos, AI is actively helping to create a more coordinated, transparent, and genuinely collaborative environment where stakeholders don't just feel informed but feel like they are truly part of the process.

### **Critical Analysis:**

When you look at all this research together, the most encouraging part is how well the theory matches up with real world experience. It seems that whether it is in a conceptual framework or on the ground in actual projects, AI tools are genuinely making it easier for teams to talk to each other, get the information they need and respond quickly to changes. The fact that we have evidence from so many different angels, from deep dive case studies to broad surveys, really strengthens that conclusion.

There are few big caveats. The main weakness is that we are still mostly taking people's word for it; we don't have a lot of hard numbers to prove the exact performance boost. The research also tends to gloss over the real- world headaches of actually implementing AI, like data security concerns, the occasional unreliable tool, and the critical need for human supervision. For the future, what we really need are long-term studies that can track the quantifiable impact and seriously grapple with the ethical questions that come with weaving AI so deeply into our workflow.

### **Connections:**

1. All studies agree that AI enhances transparency by automating reporting and facilitating real time updates.
2. Chatbots and AI assistants play a key role in continuous communication within agile sprints.
3. AI dashboards improve accessibility and comprehension for non technical stakeholders.
4. Organizational readiness and data quality are recurring factors for successful implementation.

### **Conflicts between the findings:**

1. **The Efficiency Debate:** We are seeing mixed signals on just how much time AI saves. Some researchers like Joshi(3), report strong efficiency gains, while others, like Taboada(6), point out that we still need more solid, long-term data to validate these claims.
2. **Chatbots: Helpful, But Not Magical:** the performance of AI chatbots is a classic “good news, bad news” story. They excel at handling frequently asked questions and providing instant status updates, but they often hit a wall when a conversation becomes complex or nuanced.
3. **A New Layer of Work?:** there is an interesting disagreement on the impact on managers. While AI automates many routine tasks, some studies suggest it might actually create a new supervisory workload, as humans are still essential for overseeing the AI’s work and correcting its course.

Synthesis Matrix for Literature Review:

| ID | Year | Authors                | Type/<br>Methodology    | Key Findings                                                                                              | Limitations                                                         |
|----|------|------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1  | 2024 | Felicetti et.al        | Literature + Interviews | AI tools (like chat assistants and dashboards) significantly improve communication and reporting clarity. | Limited to certain industries; may not be fully generalizable.      |
| 2  | 2023 | Čančer, Tominc, Rožman | Survey + AHP            | A positive correlation exists between higher AI adoption and improved communication efficiency.           | Rely on perception-based data rather than hard performance metrics. |
| 3  | 2024 | Joshi                  | Qualitative Interviews  | AI chatbots enhance stakeholder satisfaction and engagement by providing instant access to project data.  | Chatbots can fail to accurately interpret complex queries.          |
| 4  | 2021 | Auth, Jöhnk, & Wiecha  | Conceptual Framework    | AI enhances communication by automating updates and improving decision transparency.                      | The framework is theoretical and lacks empirical validation.        |
| 5  | 2022 | Miller                 | Multiple Case Studies   | AI tools change stakeholder roles to be more active and improve cross-functional dialogue.                | Focused only on tech organizations, limiting broader application.   |
| 6  | 2023 | Taboada et.al          | Systematic Review       | AI assistants support data-driven decisions and reduce meeting time, improving coordination.              | Scarce long-term empirical evidence; potential for reporting bias.  |

## References:

### 1. Artificial Intelligence and Project Management

- Felicetti, A. M., et al. (2024). *Artificial Intelligence and Project Management*. Elsevier, ScienceDirect.  
<https://www.sciencedirect.com/science/article/pii/S2444569X24000842>

### 2. Multi-Criteria Measurement of AI Support to Project Management

- Čančer, V., Tominc, P., & Rožman, M. (2023). Multi-Criteria Measurement of AI Support to Project Management. *IEEE Access*, 11, 142816–142828.  
<https://ieeexplore.ieee.org/abstract/document/10355961/>

### 3. Artificial Intelligence in Project Management: A Study of The Role of Ai-Powered Chatbots in Project Stakeholder Engagement

- Joshi, H. (2024). A Study of The Role of AI-Powered Chatbots in Project Stakeholder Engagement. *International Journal of Software Engineering & Project Management*.  
[https://www.academia.edu/download/111187583/Role\\_of\\_AI\\_Powered\\_Chatbot\\_in\\_Stakeholder\\_Management.pdf](https://www.academia.edu/download/111187583/Role_of_AI_Powered_Chatbot_in_Stakeholder_Management.pdf)

### 4. A Conceptual framework for Applying Artificial Intelligence in Project Management

- Auth, G., Jöhnk, J., & Wiecha, D. A. (2021). A Conceptual Framework for Applying Artificial Intelligence in Project Management. *IEEE Conference on Business Informatics (CBI)*.  
<https://doi.org/10.1109/CBI52690.2021.00027>

### 5. Stakeholder Roles in Artificial Intelligence Projects. Elsevier.

- Miller, G. J. (2022). *Stakeholder Roles in Artificial Intelligence Projects*. Elsevier.  
<https://www.sciencedirect.com/science/article/pii/S266672152200028X>

### 6. Artificial Intelligence Enabled Project Management

- Taboada et al. (2023) – *Applied Sciences*, Vol. 13(8), Article 5014. Artificial Intelligence Enabled Project Management: A Systematic Literature Review  
<https://www.mdpi.com/2076-3417/13/8/5014>