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Agility 2.0: The Impact of AI Integration on the Operation of a Financial Institution

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Abstract: In recent years, the rapid development of artificial intelligence (AI) technologies has significantly impacted various areas of corporate operations – especially those where agile methodologies are already embedded in everyday practice. This study examines how AI is transforming workflows, decision-making mechanisms, performance indicators, as well as human behavior and attitudes toward work within the agile operation of a financial institution. The research is based on a questionnaire survey completed by members of the agile team of a Hungarian financial institution, along with in-depth interviews conducted with several senior managers and professionals working in agile roles. These sources provide insights into experiences, attitudes, and organizational maturity related to the implementation of AI. The study explores how AI tools are integrated into daily routines, including task automation, predictive analytics, and more efficient collaboration. It highlights the differing perceptions of AI across various roles – from developers to product owners to executives – and sheds light on the coexistence of optimism and skepticism. Special attention is given to the challenges of aligning AI capabilities with agile principles such as flexibility, transparency, and continuous improvement. The aim of the research is to support financial institutions in developing more conscious and strategic approaches to AI adoption. The findings contribute to understanding how new technologies can become real competitive advantages in the agile environment of the future.

Keywords: Worflow transformation, Artificial intelligence, Agile operations, Organizational maturity

Introduction

Artificial Intelligence Opens up a New Dimension in the Agility of Financial Institutions

Over the past decade, the technological evolution of financial institutions (Világgazdaság, 2020) has reached a new level: automation, data-based decision-making and digital services have become not only complements but also shapes banking operations. In this dynamically changing environment, artificial intelligence (AI) targeting intelligent behavior (Crabtree, 2023) has emerged as not just a tool, but also a strategic factor — transforming our perception of agile development.

The Rise of AI in Software Engineering — A New Era in Agility

Domestic and international financial institutions are increasingly using generative AI tools, which not only automate code writing, but are also able to support backlog prioritization, help testing processes, and even participate in the production of documentation. With this, the technology affects agile roles that were previously based solely on human decision-making. Senior bank executives also agree on this (Lemák, 2025).

The introduction of AI in development teams is not only about increasing efficiency, but also about a change in culture: new skills are needed, knowledge and collaboration that support AI are becoming the norm. Very similar to learning agile operating models, a serious change of attitude must be made here (Portfolio, 2021). In addition, ethical and transparency issues arise that also affect agile decision-making mechanisms — for example, who is responsible if a strategic decision is made based on an AI proposal? AI is gradually but significantly transforming the banking sector, improving efficiency, offering personalized services, while also posing new ethical, regulatory, and technological challenges (Mirlam et al., 2023). And technological issues pose new challenges for professionals, as whether or not the solution is related to AI, it must work based on the customer's needs (Bagó, 2023). Therefore, AI is not only a technological opportunity, but also a factor that encourages reflection on the human side of agile development. The aim of the study is to explore how this new technology is shaping the development practices of financial institutions, what challenges and opportunities it brings to agile teams, and how experts relate to it.

The emergence of artificial intelligence has created a new paradigm in software development. While agile methodologies were previously based on human cooperation, iterative learning and rapid response, with the involvement of AI, these processes are gaining a new interpretation. Generative AI that appears in development cycles can automatically generate code, suggest test cases, predict bugs, or even help understand business needs — essentially becoming a virtual team member (Kilby, 2024). Obviously, the automatic generation of codes is not flawless, it cannot be applied without thinking, programming knowledge is definitely required.

For agile teams, AI is not only a technological support, but also a system of collaboration and decision support. AI is increasingly being used in sprint planning, retrospectives, and backlog management, providing real-time data, analytics, and recommendations. I note that this type of use has not been verified by anyone during our research. At the same time, it also brings new challenges: transparency, maintaining human control, and critically evaluating AI-proposed solutions are essential for agility to maintain its principles. While it increases efficiency, it also poses serious challenges in terms of data protection, team-level knowledge development, and preserving human creativity (Ziyao, 2025).

AI does not replace agile operations — it transforms and adds new values. It encourages the development of a new approach (IVSZ, 2025). The development environment of the future will be not only fast and flexible, but also intelligently supportive. AI can certainly support software development very effectively, but further research and analysis is needed to truly understand its impact on personality and processes (Cabrero, 2023), and it is also a serious challenge in terms of data protection, the knowledge level of team members, and the preservation of human creativity (Takács, 2019).

The Impact of AI on the Human and Operational Dimensions of Development

In the world of software development, AI is no longer just a technological innovation — it's also a complex organizational factor, and even a strategic tool that contributes to large-scale agile transformations (Pavlic, 2024). According to our literature research, more and more AI-based tools are appearing in the development environment of financial institutions, which not only support and assist coding and testing (Bahi et al, 2024), but also participate in the definition of backlog priorities, sprint planning, and documentation processes. Let's face it, AI is gaining a foothold in all areas, not only for customers, but also for financial institution employees (Deloitte - Magyarország, 2024). Technological evolution affects three fundamental areas:

- *The nature of the developer work:* Manual tasks are partially automated, while new competencies are needed to interact with AI — changing the daily workflow and the interpretation of roles.
- *Team structure and dynamics:* AI as a "virtual colleague" creates new forms of collaboration, challenging traditional models of trust, transparency, and accountability between agile teams.
- *Operational efficiency and flexibility:* While AI can lead to faster decision-making and optimized processes, it is questionable how this will affect long-term agility and the ability to innovate.

Regulatory Environment and Initiatives

The Artificial Intelligence Act is the first comprehensive, binding piece of legislation on artificial intelligence, adopted by the European Parliament in March 2024. It aims to ensure security and compliance with fundamental rights, while stimulating innovation and reinforcing Europe's leadership in AI (European Parliament, 2024). In May 2020, the Hungarian government finalized Hungary's Artificial Intelligence Strategy, which covers the period

2020-2030. The aim of the public document is to put Hungary at the forefront of AI development, focusing on education, research and development, industrial applications and data management. The coordinating organization of the strategy is the AI Coalition, which brings together state actors, universities and tech companies into a bunch (Government of Hungary, 2020). The Hungarian government plans to establish the Artificial Intelligence Office in the autumn of 2025, the main goal of which will be the transposition and implementation of the European Union's AI Act in Hungary. Although the specific tasks of the office are not yet known, according to the legislative plan, the bill may be submitted to parliament in September 2025, and the vote is expected in November 2025 (Government of Hungary, 2025). So this is a very recent action plan in Hungary regarding AI.

Decree No. 1301/2024 (IX.30.) Government Decree provides for the implementation of the EU AI Act 2024 in Hungary. It establishes the Hungarian Artificial Intelligence Council, which issues guidelines and positions (Government of Hungary, 2024). The background study of the Hungarian Parliament provides a comprehensive analysis of the technological types, benefits, dangers and international regulatory trends of AI, and highlights that there is no separate AI law in Hungary yet, but adaptation to the EU regulation is in progress (Szalay, 2023).

Hungary is actively striving to keep pace with European AI regulation and to build its own institutional framework for its application in Hungary. This has already been formulated in several studies by Hungarian experts (Domokos & Sajtos, 2024) The adoption of the AI Act not only creates legal compliance, but also an opportunity for the country to become a competitive player in the field of AI developments. The strategy papers, the planned office and council, and the legislative preparations all show Hungary's long-term commitment to the safe, ethical and innovative use of AI. In addition, it can be said that there is a great need for the use of AI to take place within a regular framework. We are talking about a technology that dances on very thin ice. We know that AI devices often hallucinate and are wrong. Critical thinking is required to use it in the right way. Young people are at the greatest risk, as they are not always able to decide whether the information they receive is correct or even real. AI tools are known to be based on probabilistic data, and this may be the fault. However, the error must be recognized. It is important to emphasize that the Adatbias characteristic of AI also refers to the importance of critical thinking, as AI already learns from data that already contains bias.

Material and Method

The aim of the study is to explore the impact of artificial intelligence in the agile development environment of a financial institution. To this end, I used a combined research methodology: I conducted qualitative in-depth interviews and carried out quantitative questionnaire data collection. With the method, I got to know the personal experiences and reflections of the experts, and on the other hand, I identified quantifiable patterns in the developer's practice. The thematic analysis of the interviews provided an opportunity to explore deeper meanings and correlations, while the statistical characteristics of the questionnaire results helped to identify generalizable trends. The combination of the two methods made it possible to examine the role of AI in an agile environment from multiple perspectives. To preserve anonymity, the participants of the in-depth interviews were identified anonymously.

Research questions:

1. How and in what area do development teams use AI in agile methodology?
2. What changes has the use of AI brought to the way teams collaborate and role?
3. To what extent is the integration of artificial intelligence into decision-making mechanisms perceptible?
4. What impact does AI have on the success of the application of the agile framework in a financial institution environment?
5. To what extent do developers feel that AI is useful in their daily work?
6. Does the use of AI affect the satisfaction or performance of agile teams?

Results and Discussion

In the qualitative phase, 3 in-depth interviews were conducted with developers in different roles, who encounter AI-based solutions directly or at the management level. During the quantitative data collection, an online questionnaire was filled out by the employees of the agile teams involved. 28 responses were received, which represents a response rate of 35% compared to the targeted population of about 80 people. 64% of the respondents, 18 people, use artificial intelligence tools regularly, on a daily basis, and the remaining 10 respondents (36%) also occasionally.

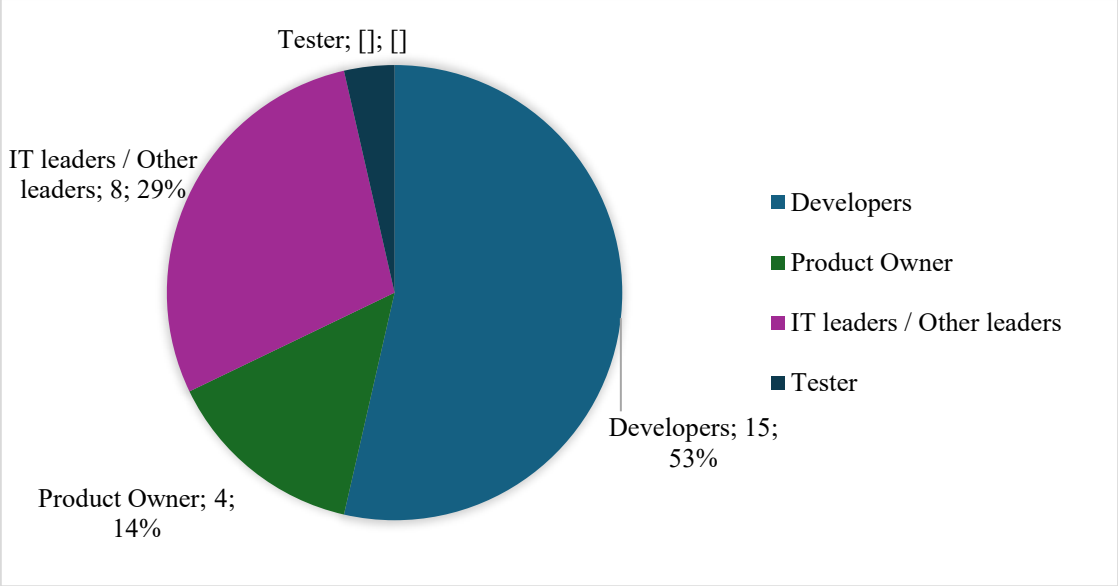

Figure 1. Role of respondents
(Source: Author's own research, 2025, n = 28)

You can see that the questionnaire was shared with about 80 people who have all the agile roles from the system organizer to the high-level Tribe Lead. Despite this, responses were typically received only at the management level (Figure 1). This may be due to the fact that system organizers do not yet use artificial intelligence at all, so they did not consider it important to fill it out, or it was negative thinking that prevented them from doing so.

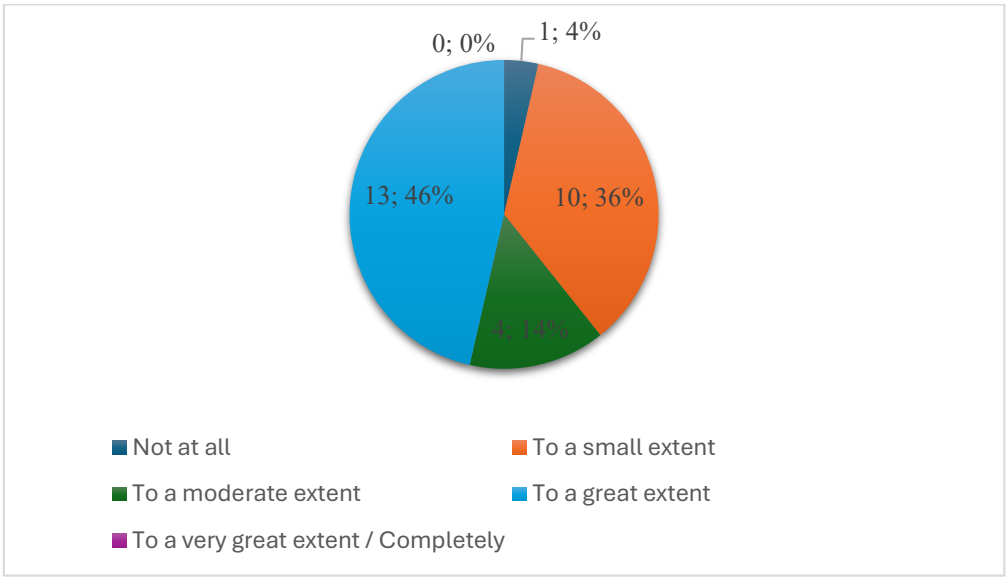

Figure 2. The impact of AI on work
(Source: Author's own research, 2025, n = 28)

Figure 2 shows that 46% of respondents said that the emergence of AI has significantly changed their daily work. Over the past 12 months, the rate of use of AI in their work has changed at an average rate (Figure 2). According to the subjects of the in-depth interviews, they had already tried to use the available AI tools on an experimental basis, but since the bank provided them with a supervised device, they jumped headlong into the opportunity to a much greater extent. This can be illustrated by the fact that according to the respondents, the rate of AI use has changed only to a lesser extent in the past 12 months, depending on the role. However, the difference in productivity is much more vivid. Also role-specific, but 45% of respondents experienced a positive change in how efficiently they can perform their work. The following statements were made during the survey research:

- AI helps you better understand customer needs.
- AI doesn't distract from real customer problems.

- AI enables faster analysis of customer data.
- AI does not diminish the role of human intuition.

Based on the in-depth interviews, it can be clearly stated that AI allows for very efficient work if it is used properly. Respondents were unable to provide clear information about the skills required, but they made it clear that critical thinking and openness are essential to properly use AI or any of its components. Regarding the motivation for the use of AI, an interesting fact emerged based on in-depth interviews and questionnaire answers.

The Four Faces of the AI Revolution in the Workplace

The rise of AI is diverse not only in terms of technology, but also in terms of human reactions. During the in-depth interviews, the subjects uniformly grouped the employees working with the AI. Based on the attitudes, I formulated the following grouping:

- *Enthusiastic Pioneers:* evangelists of the world of AI. They see the potential in it, they are happy to experiment with it, and they are always looking for new opportunities. They inspire, pull others along with them, and are not afraid to break new ground.
- *Silent Beneficiaries:* They use AI because "that's what protocol says." They acknowledge its benefits, but they have not yet ignited enthusiasm. Rather, they are observers who follow developments from the background and build on the innovations of the Enthusiastic Pioneers.
- *Silent Enemies:* They also use AI, but more out of necessity. Their focus is on difficulties and they find it difficult to open up to new opportunities. Change is a burden for them, not an opportunity.
- *Loud Resistances:* AI is a red cloth for them. They openly criticize it, actively oppose it in debates, and can even hinder or sabotage projects. They are the defenders of the status quo, who not only doubt but also fight.

Based on the above, it can be said that just like in the case of an agile organizational transformation, it is necessary to fight for employee satisfaction and for the AI-driven tools to be used consciously and accepting the approach. They need to develop critical thinking and a sense of competition. Because it is no longer a competitive advantage for a financial institution to use artificial intelligence. The competitive disadvantage is if you don't. To accept and understand this, the loyalty of employees is needed. They must feel that it is important for the company to maintain a competitive advantage, which is why it can stay in the market, generate profit from it, from which it pays salaries and bonuses. The employee must feel ownership of the technology. AI is the future, you can't resist. If we don't use it, we will be left behind.

Opportunities and Development Directions: The Future of us from the Perspective of Agile Teams

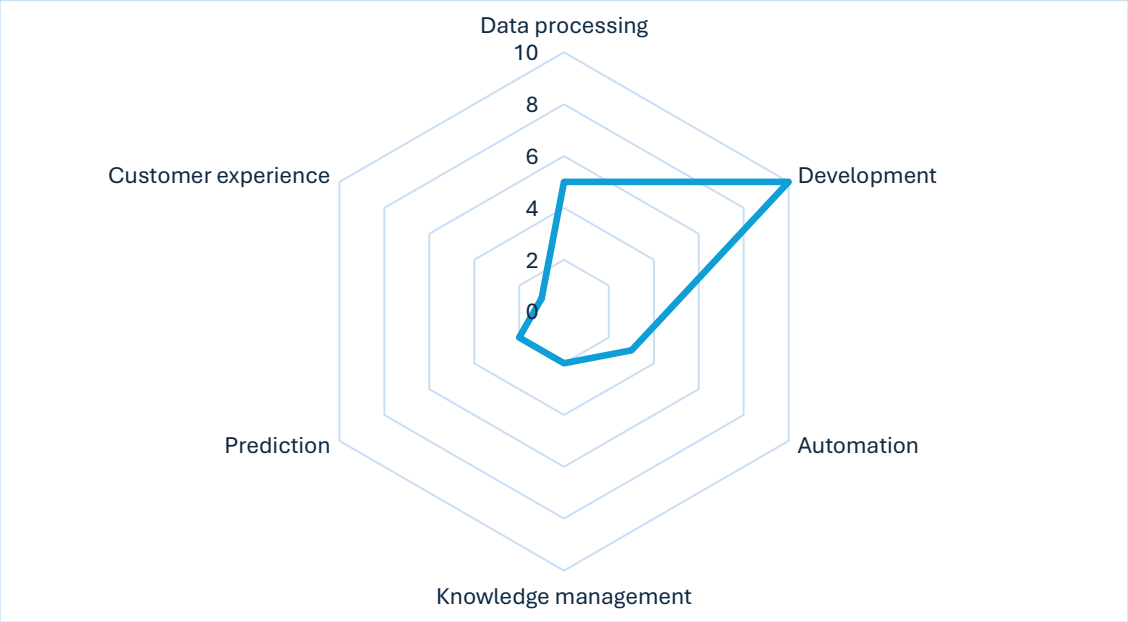

Figure 3. Opportunities
(Source: Author's own research, 2025, n = 28)

Of course, during the questionnaires and in-depth interviews, more opportunities than potential emerged for the financial institution. Out of the 27 responses, a total of 16 responses were received, which formulated clear possibilities. These are data processing, development, automation, knowledge management, prediction, customer experience. The spider web diagram above (Figure 3) clearly shows that the potential of AI is consistently pointing in the direction of data processing and development, followed by automation. Although artificial intelligence tools are already used by employees in several companies, and let's face it, we often scramble to it for answers, it seems that the financial institution has not yet reached the point of admitting this. Or just don't communicate it. In conclusion, as it stands, AI primarily contributes to improving work efficiency in data processing and development, and employees also see the future in this. Obviously, this is also due to the fact that IT companies providing AI tools are already providing AI tools specifically for developers, which really makes the work easier.

Risk Analysis: Concerns of the Application of AI in an Agile Development Environment

Based on the questionnaire responses, six key areas were identified where the use of AI could pose a potential risk in the decision-making process.

1. AI can simplify the interpretation of customer needs, which can distort the product version created by the Product Owner (PO).
2. AI-generated recommendations can suppress PO's intuition, which is especially important for complex or unstructured problems
3. The data that influences AI's decisions is not always transparent, which can lead to a loss of trust and erroneous decisions.
4. AI can skew business priorities by disproportionately weighting data. This can be especially dangerous if the PO does not have enough control over the directions suggested by the AI.
5. The use of AI can raise ethical and privacy concerns, especially when handling sensitive customer data.
6. The overuse of AI can lead to a decrease in the autonomy of the PO, which can result in a void of the role in the long run.

It is a well-known fact that AI often works with distorted data, and the term "black box" is also used, according to which it happens that the basis and calculation of the analysis and decision made by the AI cannot be determined. These also demonstrate that AI-generated data is not always reliable (26). It can be said that the use of AI in the PO decision-making process poses risks in several aspects, especially in the areas of transparency, the marginalization of intuition, and ethical and data protection issues. The results suggest that AI integration should be treated with caution and that the role of PO in AI-assisted decision-making situations should be strengthened. Strict regulation of the use of AI can certainly be a solution to this, not only at the national level, but also in the organizations that use it. Obviously, this must be followed by a strict audit, because why regulate if its compliance is not controlled. We hope that this will happen soon. Based on the responses to the questionnaire, the introduction of AI in the field of agile development poses risks in several dimensions. They affect not only technological, but also organizational, legal and human factors. Based on the free-form answers, I present the most frequently mentioned risks and their possible consequences thematically.

1. Privacy and security

A significant number of respondents mentioned data security, data leakage, IT security and GDPR compliance as critical risk factors. AI systems often handle large amounts of sensitive data, so inadequate protection can have serious consequences. Of particular concern is the fact that it is difficult to guarantee stable security compliance due to the fast update cycles of AI solutions available on the market (e.g. MS Copilot).

2. Education and awareness

Several responses indicated that users do not have sufficient knowledge about the correct use of AI. Lack of education, lack of knowledge of the limitations of AI, and excessive expectations can all contribute to flawed application. Sensitization and training at the organizational level are essential to treat AI as an opportunity, not a threat.

3. Technology limitations and reliability

AI is not a universal solution. Several respondents highlighted that AI is not intelligent or reliable enough in all situations, especially in handling so-called "edge cases". Over-automation can lead to a decrease in developer creativity, as developers may tend to forgo deeper problem-solving in addition to mid-level AI solutions.

4. User attitude and expectations

The overuse of AI and lack of self-control are also risks. If users leave all problems to AI, it can lead to a weakening of professional competencies in the long run. It is important that AI does not become the sole source of information, but functions as a complementary tool.

5. Organizational culture and adaptation
The body's ability to adapt is crucial. The introduction of AI requires not only a technological but also a cultural change. Sensitizing and involving employees can help them see AI as an opportunity for development rather than as an enemy.

6. Legal and ethical issues
The unsettled legal background, ethical dilemmas (e.g. dismissals, liability issues) and lack of transparency can all be serious obstacles to the application of AI. Respondents say that clear regulation and responsible use are needed.

7. Quality and integration
Technology integration and quality control are also priority areas. AI should only be implemented with appropriate processes and controls, especially for automated decision-making.

8. Accuracy and source of information
Several respondents indicated that the accuracy of the answers given by AI is difficult to judge in business matters. In addition, the distinction between AI-generated content and human input (transparency) is also an important aspect.

The application of AI in an agile development environment therefore carries complex and multifaceted risks. Successful integration requires consideration not only of technological, but also of organizational, legal and human factors.

- Strengthen privacy and security protocols
- Introduction of educational and sensitization programs
- Consciously managing technological limitations
- Developing organizational culture
- Ensuring ethical and legal compliance

Conclusion

Based on the in-depth interviews and the questionnaire survey, it can be stated that in the case of the financial institution under review, employees in the agile area do not yet use artificial intelligence tools to support decision-making, regardless of their role. Although the agile field has already started on the path of transformation, it is in a very rudimentary phase. In addition to the AI tools available to pretty much everyone, some developers are already trying out AI tools optimized for the development environment, but this is still in its infancy. It takes longer to gain experience, not to mention that even though this solution is based on code writing and developer competencies, strict regulation and its enforcement are crucial due to the risks identified during the research. However, it has been clearly established that the use of AI tools greatly simplifies the work, and some tasks can be completed much sooner than before. This helps employees to do quality work in their remaining time or to develop their competence through further training.

Obviously, AI-generated content is not 100% reliable, so critical thinking is the most important. To put it colloquially, don't trust what the AI tells you. It needs to be checked. However, if we want to compare the content of a document with a regulatory document, for example, we may gain more information than if we rely solely on our own reading. In this case, the AI works quite well, but unfortunately we cannot be sure of the correctness of the result here either. In our further research, I plan to examine the use of AI in areas of financial institutions that do not deal with development, such as internal audit and background operations.

Scientific Ethics Declaration

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Conflict of Interest

* The authors declare that they have no conflicts of interest

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