Impact of Integration of Generative AI in Agile Software Engineering

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1. Introduction

This study delves into integrating Generative AI in Agile software engineering, showcasing its transformative potential with industry data and examples. While GenAI accelerates processes and fosters innovation, ensuring ethical and secure deployment is vital for its full potential.

2. Methodology

The first study utilizes qualitative research, mainly through semi-structured interviews, employing coding methods like Glasser's approach to grounded theory and Browne's framework for thematic analysis. It includes 25 one-hour interviews with global technology leaders, supplemented by follow-up questions for specific details, using open-ended and descriptive inquiries.

3. Data Analysis

Integrating Generative AI into software engineering automates tasks. With responsible adoption, scalable infrastructure, and secure ethical practices it drives productivity, innovation, and organizational transformation.

Following steps were performed to analyze the data:

- Data preparation by organizing and transcribing interview data into text format
- Familiarization by thoroughly reading transcripts for a deep understanding
- Thematic analysis identified key themes and sub-themes, representing core findings
- Constant Comparison iteratively compared new data with existing codes and themes, refining insights and ensuring accuracy

Using NVivo software, tagged interview transcripts with specific codes, categorized text into meaningful units. Initial open coding identified over 150 codes. Axial coding grouped these into larger categories, and selective coding refined them into four dominant themes: business impact & RoI, team dynamics & alignment, key considerations (ethical, security, scaling etc.) and overcoming implementation challenges.
This structured approach ensured rigorous and comprehensive analysis, offering nuanced insights into Generative AI integration in Agile Software Engineering.

4. Summary of Findings

1. Business impact and RoI measurement guide strategic decisions on Generative AI integration
2. Stakeholder alignment and confidence in Generative AI are essential for successful implementation, requiring transparent communication and collaboration
3. Key considerations like ethical, security and scaling
4. Overcoming implementation challenges ensures a comprehensive approach

5. Future Study

- Second study with Quantitative research with survey would further enrich the data analysis
- Multiple sub-themes have emerged and can be area of further research as Generative AI technology matures and scales across organizations
- Key considerations could evolve with wider adoption and provide opportunity for further research building on top of this study

6. References

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