

Critical Review

GROUP-5

CSN-254

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Summary:

Creativity is the source to improvise solutions to problems for dominating complex systems such as software development. This research explores the intricate relationship between a software organization's workforce and innovation, emphasizing the pivotal role of creativity. Recruiting inherently creative individuals or training them is seen as foundational for a competitive edge in generating and implementing novel ideas. However, the paper contends that hiring alone is insufficient; creativity must be integrated into the organization's operations. It reflects on traditional in-person meetings as catalysts for creativity, including client interviews, whiteboard design sessions, and spontaneous code reviews.

However, the COVID-19 pandemic necessitated a widespread shift to fully remote work, impacting creativity due to reduced interconnectivity and increased silos among employees. Videoconferencing, a common tool for remote work, was found to inhibit creative idea production. The trend towards hybrid work is driven by the recognition that innovation may be at stake, with various policies in place for team members to collocate during certain days in the office. To address the challenges of remote and hybrid work, the report introduces eight emerging modes of working that hybrid software organizations have adopted to promote creativity. These approaches were identified through an interview study conducted between November 2021 and April 2022 with 26 industry practitioners from diverse roles, industries, and experience levels. The authors emphasize the need for organizations to consider contextual factors when selecting an approach, such as breadth and depth of exploration, ease of launch, speed of results, and inclusivity.

Applications:

The practical applications of the discussed practices shine through in various instances. Initiatives like hackathons exemplify a generative culture that fosters creativity for effective problem-solving in the face of challenges. Platforms like virtual suggestion boxes prioritize psychological safety, providing team members a secure space to express ideas and concerns. Adoption of communication tools like Slack and virtual whiteboarding platforms such as Miro facilitates efficient remote brainstorming. Embracing agile methodologies like Scrum or Kanban supports iterative development, allowing teams to dynamically adapt to changing project requirements. Regular retrospectives become a norm, fostering a culture of continuous learning and enhancement. Practices like hosting virtual team-building events and creative workshops reinforce team bonds, instilling a culture that values innovation and adaptability.

Tools and Technologies:

- Remote brainstorming
- Single-author document with extensive team commenting/ reviewing
- Designing alternatives with tradeoff analysis
- Spontaneous screen share and discussion
- Regular standing meetings
- Hybrid hackathons
- Distributed mob programming
- Temporary colocation

Positive Aspects:

The authors emphasise key considerations for selecting approaches to foster creativity in hybrid software development. Derived from interviews, these factors include breadth of exploration, depth of examination, launch agility, time sensitivity, global adaptability, and inclusivity. These insights guide organisations in strategically choosing methods aligned with their unique needs and the imperative of fostering inclusive creativity in hybrid software development.

- **Remote Brainstorming :**
 - Balances individual creativity with collaborative idea generation.
 - Encourages broad participation due to its short duration and remote accessibility.
- **Single-Author Document with Extensive Team Reviewing:**
 - Allows for deep, focused work by individuals.
 - Works well across different time zones, as it doesn't require simultaneous collaboration.
- **Designing Alternatives with Tradeoff Analysis:**
 - Produces well-defined options for meaningful comparison.
 - Encourages diverse solutions by having subteams work independently.
- **Spontaneous Screen Share and Discussion:**
 - Facilitates quick problem-solving with a small group.
 - Mimics in-person discussions, making them more natural and manageable.
- **Regular Standing Meetings:**
 - Ensures consistent participation through advanced scheduling.
 - Supports idea generation and problem-solving with collective expertise.
- **Hybrid Hackathons:**
 - Encourages innovative thinking beyond current projects.
 - Offers networking and learning opportunities.

- **Distributed Mob Programming:**
 - Promotes learning through role rotation, especially for junior engineers.
 - Aids in creative and collaborative problem-solving in coding.
- **Temporary Colocation:**
 - Strengthens social connections within the team.
 - Provides focused time for creative thinking and reflection without usual work distractions.

Issues and Gaps:

- **Dependency on Technology:** Reliance on tools and technology for remote collaboration can lead to disruptions due to technical issues or poor internet connectivity.
- **Risk of Overload:** Excessive meetings and interactions may lead to burnout or reduced productivity if not managed effectively.
- **Communication Challenges:** Hybrid setups may pose communication challenges, hindering effective collaboration and idea exchange.
- **Time Zone Differences:** Coordination across time zones can be challenging, impacting the availability and participation of team members.
- **Isolation:** Remote team members may feel isolated or disconnected from on-site colleagues, affecting morale and creativity.

Solutions to Problems:

- Effective Meeting Management: Implement strategies to minimise interruptions and manage time effectively during meetings and discussions.
- Enhanced Communication: Foster open communication channels, encourage regular updates, and provide platforms for informal interactions to mitigate feelings of isolation.
- Flexible Scheduling: Consider rotating meeting times or adopting asynchronous communication methods to accommodate time zone differences.
- Tech Infrastructure: Invest in robust technology infrastructure and provide training to team members to mitigate technical challenges and ensure smooth collaboration.
- Cultural Adaptation: Foster a culture of inclusivity, psychological safety, and adaptability to bridge gaps and promote effective collaboration in hybrid environments.
- Regular Feedback: Encourage feedback from team members to identify challenges and implement continuous improvements in collaboration processes.

Contributions:

- Summary and Applications:
 - Adarsh Dehariya, Vikas Kumar, and Chavan Piyush Gokul
- Positive Aspects:
 - Indranil Das
- Issues and Gaps:
 - Hitesh Dhiman
- Solutions:
 - Poornima and Kasepogu Akansksha