

How sociotechnical reflection influence wellbeing and productivity during GenAI integration

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Abstract

This brief paper summarizes the key insights from a keynote address at the STPIS 2024 workshop by Louise Harder Fischer, an Associate Professor at the IT University of Copenhagen. Louise has long pursued research grounded in the sociotechnical perspective, exploring how this approach—when adapted to the modern world of work—can help shape workplaces where technology enhances not only productivity but also long-term well-being. In her keynote, she shared findings from an ongoing research project that examines how sociotechnical principles can support organizations, teams, and individuals in achieving both productivity and well-being when integrating emerging technologies, especially intelligent systems, into various professions. The first paper from this project was published in June 2024, coinciding with the European Conference on Information Systems.

Keywords

Sociotechnical principles, GenAI integration, STAIR Method

1. Introduction

This invited keynote presentation focused on showing how the development of sociotechnical principles can guide the integration of Generative AI (GenAI) in the workplace in meaningful ways. Reporting from a specific interventionist case study centred around a Communication Department of a large Danish Municipality [1], the aim of the interventionist study was to balance the benefits of AI technology with considerations of well-being, autonomy, and ethics in knowledge work. The study is inspired by how sociotechnical principles historically has delivered on these outcomes [2,3,4,5] emphasizing the creation of a balanced relationship between humans and technology, that foster learning, innovation, and ethical practice in an AI-driven future.

2. Theoretical framework and methodology

The research draws on sociotechnical theory and perspectives [2,3,4,6,7] and work design theory [5]. These frameworks focus on understanding how technology shapes work and the importance of well-designed jobs in promoting well-being, maintaining skills, and fostering creativity. Theoretical underpinnings emphasize the need for a proactive approach to work design in response to GenAI, ensuring that technology enhances rather than diminishes the quality of work life.

An Action Design Research (ADR) approach [8] is employed, consisting of four phases and seven guiding principles. The present research reports on the first two phases. The first phase being 'Problem Formulation', which centers on practice-inspired research, exploring how to facilitate the adoption of GenAI and support meaningful knowledge work using sociotechnical

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principles. Theoretical foundations were integrated into the creation of an artifact that serves as the guiding principles for GenAI adoption. The second phase of 'Building, Intervention & Evaluation' covered extensive collaboration with the Communication Department, including group interviews, workplace observations, and co-creation sessions, in which employees actively participated in shaping the sociotechnical principles that could guide the ongoing integration of GenAI in their work processes.

3. Development of Sociotechnical Principles

During the second intervention phase, eight sociotechnical principles were co-created with the employees, ensuring that GenAI integration aligns with workplace values. In table 1 the eight principles are presented. Applying these principles requires an active dialogue and reflection systematically organized making sure that when GenAI is integrated in a workflow, STP 1-8 have been considered.

Table 1. Sociotechnical principles for ongoing reflection

| | | |
|-------|--|---|
| STP 1 | Value Addition | GenAI must demonstrably enhance the work and contribute meaningfully to organizational goals. |
| STP2 | Framework and Guideline Support | Clear frameworks must be in place to guide the ethical and legal use of GenAI, ensuring alignment with regulations such as the EU AI Act. |
| STP3 | Opportunities for Experimentation and Learning | The workplace must foster continuous learning and experimentation with GenAI, supporting innovation and adaptation to new tools and usecases. |
| STP4 | Competency Development | Ensuring that employees have or can acquire the skills necessary to effectively use GenAI in their workflows. |
| STP5 | Autonomy and Self-Determination | Employees retain control over how GenAI is used in their tasks, safeguarding their ability to shape their work processes. |
| STP6 | Social and Relational Considerations | Maintaining the human element in workflows, ensuring that AI does not erode social interactions and collaborative relationships. |
| STP7 | Enhancing Vocation and Creativity | GenAI should support professional growth and creativity, helping employees to enhance their roles rather than replace them. |
| STP8 | Ethical Reflection: | Ethical considerations must be part of the discussion when using AI, ensuring that individual beliefs and societal norms are respected. |

4. The STAIR Method, Outcomes and Reflections

The resulting framework' is termed the STAIR Method and is an acronym for Sociotechnical AI Reflection. The method is designed to help employees and organizations navigate the complexities of AI integration, viewing the process as a continuous and non-linear journey. When a new usage opportunity comes into focus, it is recommended to go through all the STP's. In this way the STAIR method provides a metaphorical "staircase" where professionals from various fields (e.g., communication, law, IT, accounting) can ascend based on their interactions with GenAI. This method emphasizes ongoing reflection, allowing organizations to respond dynamically to the changing nature of GenAI's role in work.

The presentation emphasized that the STAIR Method and the developed principles can support leaders in the responsible integration of GenAI, ensuring transparency, governance, and compliance with emerging regulations such as the EU AI Act. The sociotechnical principles also

help maintain a balance between accountability to organizational rules and the autonomy necessary for creative and meaningful work at the levels of individuals and groups.

5. Contributions and Future Research

The study so far offers both theoretical and practical contributions. Theoretically it proposes the development of a "sociotechnical job crafting theory" that bridges the gap between individual job crafting and organizational governance, focusing on a human-centered, profession-first perspective. Practically, the STAIR Method provides a tangible framework for organizations to manage the integration of GenAI technologies in a way that enhances productivity, well-being, and ethical practice amidst continuous technological change on several levels.

The work suggests avenues for future research, particularly in understanding how sociotechnical principles can continue to evolve in response to the increasing integration of GenAI across different professions. It also emphasizes the need for practical methods to support organizations during ongoing shifts in technology, ensuring that genAI adoption remains aligned with professional standards, well-being, and ethical norms.

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