Implementing a Generative AI Workflow Platform in a Media Company

A Work-in-Progress Case Study of 'heise I/O'

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Abstract—This paper presents a case study on the development and implementation of "heise I/O", a proprietary Generative Artificial Intelligence (GenAI) workflow platform within heise group, a major German media company. We outline the strategic approach based on principles of quality, source-based generation, transparency, and human responsibility. Focusing on practical outcomes, we detail initial results and quantifiable impacts across different departments, demonstrating significant resource savings, enhanced content production efficiency, and new operational possibilities. The paper shares key lessons learned from this real-world implementation, highlighting how a structured platform facilitates effective GenAI integration for tangible digital transformation outcomes in a media environment.

Keywords-Generative AI; Digital Transformation; Media Industry; Organisational Implementation.

I. INTRODUCTION

The transformative potential of generative AI (GenAI) necessitates strategic integration within organisations, particularly for content-intensive businesses like media companies. Recent statistics highlight the adoption of AI technologies in Germany, with only 20% of companies utilising AI according to the Federal Statistical Office [1]. A Cisco study further reveals that merely 6% of German companies consider themselves optimally prepared for AI implementation—a decline from the previous year [2]. This hesitancy stems from various barriers, including knowledge gaps (cited by 71% of companies), legal uncertainties (58%), and data protection concerns (53%) [1].

Recognising both the opportunities and challenges presented by GenAI, the heise group, a leading German media publisher, developed "heise I/O" (Input/Output) [4], a dedicated platform designed to manage and scale GenAI applications effectively and responsibly. This approach addresses a fundamental limitation of generic AI chat interfaces: while tools like ChatGPT offer impressive capabilities, they lack the structure, consistency, and collaborative features required for professional content production environments.

This paper provides a case study on the initial phase of heise I/O's implementation, focusing on the practical results and impacts achieved across different departments. We examine how the platform's structured workflow approach enables teams to leverage LLMs and other AI tools through standardised, reusable prompt processes. By sharing concrete examples and quantifiable outcomes, we aim to contribute practical insights to the growing body of knowledge on organisational AI adoption, particularly in content-intensive industries facing digital transformation challenges.

The remainder of this paper is organised as follows: Section II describes the heise I/O platform, its guiding principles, and implementation approach. Section III presents concrete results and quantifiable impacts across different use cases. Section IV discusses key lessons learned and outlines future development directions. Finally, Section V concludes with implications for digital transformation in media organisations.

II. HEISE I/O: PLATFORM, PRINCIPLES, AND IMPLEMENTATION OVERVIEW

In this section we will discuss the overall platform architecture and our philosophy behind heise I/O:

A. Platform Architecture and Functionality

heise I/O functions as a structured workflow engine, enabling teams to leverage Large Language Models (LLMs) and other AI tools through standardised, reusable prompt processes. This controlled approach contrasts with ad-hoc, chat-based AI usage that characterises many early-stage organisational AI implementations.

The platform integrates multiple AI models and capabilities into a unified interface, allowing users to:

- Create, store, and share reusable prompt templates
- Process various input formats (text, audio, images)
- Chain multiple AI operations into coherent workflows
- Maintain version control of prompts and outputs
- Track usage patterns and efficiency metrics

Unlike generic AI chat interfaces, heise I/O is designed specifically for team-based content production, with features enabling collaborative development and quality assurance of AI-assisted workflows. While the platform allows for the creation of new prompt templates and workflows by anyone, typically a core group of trained 'AI ambassadors' or 'power users' initially develops and refines these processes before they are shared more broadly. Standard users primarily utilize existing, tested workflows, though opportunities for proposing new ones exist through collaborative channels.

The heise I/O platform itself provides the environment for modeling these workflows. This involves defining sequences of prompt-based operations, selecting appropriate AI models for each step, and configuring input/output parameters within the platform's interface. Use cases are typically identified through departmental needs analysis and then iteratively translated into these structured prompt chains.

B. Guiding Principles

The implementation of heise I/O is guided by four core principles:

1. **Quality and Reliability**: Prompts are designed to consistently deliver outputs that meet professional standards. This requires careful engineering and testing to ensure that the same prompt produces reliably similar quality results across multiple uses.

2. **Source-Based Generation**: AI outputs are grounded in user-provided, trusted sources, rather than relying on the model's internal knowledge or on online research, which can be difficult to control. This approach treats AI as a kind of 'text calculator'—similar to a pocket calculator used in mathematics—that processes specified inputs into desired outputs by following explicit instructions.

3. **Transparency and Control**: All AI processes are documented and visible within the organisation. Instead of individual, unmonitored chat interactions, the platform maintains centralised management of approved prompt processes.

4. **Human Responsibility**: The platform emphasises that humans remain accountable for all final outputs. AI is positioned as a tool that augments rather than replaces human judgment and creativity.

C. Implementation Approach

The roll-out of heise I/O began with a three-month testing phase followed by broader deployment across the organisation. Key implementation steps included comprehensive preparation and training activities. The organisation conducted two dedicated "AI Weeks" featuring over 35 training sessions with more than 1000 participants, with the keynote session alone attracting over 250 attendees. These events covered a wide range of AI topics from basic ChatGPT usage to specialised applications of heise I/O, generating significant interest among staff.

Following these initial awareness-building activities, the company developed standardised onboarding workshops to establish a common understanding of AI capabilities and limitations. These workshops focused on practical applications, allowing participants to create their own prompts and explore potential use cases specific to their roles. The training emphasised responsible AI usage and effective prompt engineering techniques that could be learned within a relatively short timeframe.

To sustain momentum, the organisation created initial prompt libraries for common tasks across different departments and appointed "AI ambassadors" within teams to champion adoption and share successful use cases. These ambassadors were tasked with regularly bringing AI topics into team discussions and identifying repetitive production tasks that could benefit from AI assistance. The company also established guidelines for appropriate AI use, including prohibitions against using AI-generated photorealistic images in journalistic contexts to maintain editorial integrity.

This structured approach to implementation allowed the organisation to move beyond experimental, individual AI usage toward systematic integration of GenAI into production workflows. Using AI vision capabilities via API and an optimized workflow in heise I/O, we automatically generated relevant descriptions for 14,000 images at a total cost of only €300. Until today, the company deployed 36 instances of heise I/O, serving over 940 users (including the users from the heise group) with access to more than 250 regularly used prompt processes, demonstrating the scale and depth of the implementation effort.

III. PRACTICAL RESULTS AND QUANTIFIABLE IMPACT

Since its introduction in September 2023, heise I/O has seen rapid adoption at heise group, with over 590 employees now actively using the platform across various departments. Through the automation and optimisation of numerous repetitive tasks, a conservative internal estimate indicates resource savings equivalent to over two full-time person-years within the first year of broad usage [5]. Several concrete cases illustrate the platform's impact:

A. Automated Newsletter Generation

For the heise online "Botti" newsletter, delivered twice daily to over 50,000 subscribers via multiple channels, a structured workflow reduced the average creation time from approximately 15 minutes to just 2 minutes per issue. The workflow incorporates:

- Automatic selection and formatting of current news links
- Generation of contextually appropriate introductions and conclusions
- Maintenance of a consistent, unique brand voice through carefully designed prompts

This efficiency gain saves the editorial team over 1.5 workdays per month while maintaining quality and personality in the content. It also illustrates how a process previously handled by a single person can now be distributed across several team members—without any loss in editorial quality.

B. Podcast Production Efficiency

The production of the daily "kurz informiert" podcast was significantly streamlined through an integrated AI workflow that includes:

- AI-assisted summarisation of text sources into concise script formats
- Generation of audio narration using a cloned voice of the presenter
- Automated post-processing of audio content

This process efficiency enabled the doubling of daily broadcasts of the full podcast episodes from one to two, directly contributing to an 88% increase in podcast

listenership since the beginning of the year, with over 1.4 million listens per month as of today. This highlights AI's role in increasing output frequency and reach without compromising quality.

C. Image Metadata Automation

Generating metadata (alt-text, captions) for large image archives is a time-consuming but necessary task for accessibility and Search Engine Optimization (SEO). Using AI's vision capabilities via an API and a finetuned process via heise I/O, a mass process automatically generated relevant texts for 14,000 images for approximately €300. This task would have required weeks or months of manual work, showcasing AI's scalability and cost-effectiveness for routine content enrichment. The implementation is particularly timely given upcoming accessibility regulations in Germany requiring alt-text for images by mid-2025, demonstrating how AI can help organisations meet compliance requirements efficiently.

D. Content Repurposing

Transforming audio content (like podcast transcripts) into multiple formats (blog posts, show notes, social media teasers) was previously highly manual. With AI workflows in heise I/O:

- Audio files can be automatically transcribed
- Transcripts are processed through customised workflows to extract quotes and create derivative content
- Various output formats are generated simultaneously, maintaining consistent messaging across channels

This process can save up to 4+ hours per podcast, freeing up human resources for more complex, creative tasks and demonstrating the power of chaining AI-assisted steps in a workflow.

E. Marketing and Sales Content

In marketing and sales, heise I/O is used for generating ad copy, email drafts, and product descriptions. For heise regioconcept, implementing AI-assisted text production led to:

- Over €60,000 in saved external costs for content creation
- A 30% increase in order volume within a year
- Improved text quality as rated by both internal reviewers and clients

This illustrates the direct business impact on revenue-generating activities, where AI reduces costs and enables capacity expansion without additional staffing. These results indicate that a structured platform approach, guided by clear principles, enables the successful integration of GenAI into diverse media production workflows, leading to measurable efficiency gains and resource savings.

IV. KEY LESSONS AND FURTHER OUTLOOK

The implementation of heise I/O has yielded several important insights for organisations seeking to integrate GenAI effectively:

A. Platform Structure is Essential

A structured platform approach proves significantly more effective than allowing individual, ad-hoc AI tool usage. This structure provides:

- Quality control through tested, standardised prompt templates
- Knowledge sharing across teams and departments
- Consistency in AI-assisted outputs
- Measurability of impact and efficiency gains

The contrast between chat-based interactions and workflow-based processes is particularly evident in professional content production, where reliability and consistency are paramount. Still, the platform makes use of standard chat support, which is well-suited for background tasks, more creative or individual workflows, brainstorming, and ad hoc assistance.

B. Clear Principles Guide Responsible Implementation

Defining clear principles (source-based generation, human responsibility, transparency) has been vital for establishing trust and ensuring ethical AI application. These principles help address common concerns about AI quality and reliability while providing guardrails for appropriate use.

C. Adoption Requires Ongoing Support and Expectation Management

While initial results are promising, successful user adoption requires:

- Continuous training and support beyond initial onboarding
- Addressing potential resistance by demonstrating tangible benefits
- Managing expectations about AI capabilities and limitations
- Providing time for experimentation and process development

The metacognitive effort [6] required to develop effective AI workflows initially deters some users, but those who invest in this process often discover significant long-term efficiency gains.

D. Future Development Directions

As a work in progress, development continues, focusing on:

- Expanding heise I/O's multimodal capabilities (text-to-video, improved image generation)
- Integrating advanced research tools and improved Retrieval-Augmented Generation (RAG) systems
- Developing "Context on Demand" features that allow readers to explore content at varying levels of depth—based on the same trusted sources used by the editorial team to draft articles.

- Enhancing direct integration with content management and distribution systems

The aim goes beyond simply accelerating the act of "writing things down"—although this shift towards a "direct to draft" approach is a key efficiency gain. More broadly, the goal is to unlock new potential by allowing human experts to focus on higher-value tasks, while AI supports routine content processing. At the same time, it enables improvements in both the quantity and quality of content across departments and among individuals—regardless of their varying levels of AI or digital expertise. In doing so, it actively contributes to shaping the future of digital content creation within the heise group.

V. CONCLUSION AND FUTURE WORK

This case study demonstrates that a structured platform approach to GenAI implementation can yield significant, measurable benefits in media organisations. The heise I/O implementation shows how principles-guided AI integration can enhance productivity while maintaining quality and human oversight in content production.

The results challenge the notion that AI adoption necessarily leads to workforce reduction, instead showing how it can enable capacity expansion, new product development, and higher-value work. This aligns with emerging research suggesting that successful AI implementation often involves augmenting rather than replacing human capabilities [3].

For media organisations specifically, the case highlights how GenAI can address industry-specific challenges, such as content repurposing across channels, metadata generation at scale, and efficient newsletter production—all areas where manual processes have traditionally created bottlenecks.

Future research should examine the long-term sustainability of these efficiency gains and explore how structured AI platforms might evolve to address emerging challenges in content authenticity, personalisation, and cross-modal generation. Additionally, comparative studies across different media organisations could help identify industry-specific best practices for GenAI implementation.

As media continues to digitise, platforms like heise I/O show how AI can be practically integrated into editorial workflows—speeding up routine tasks, improving consistency, and making expert knowledge more scalable, without replacing human judgement or creativity.

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