Generative UI Reshapes Design Practice, Not Design Relevance

RACHEL EARDLEY* and EMMA L. TONKIN, University of Bristol, United Kingdom

In this position paper, based on observing a design process, we, as UX design and governance researchers respectively, briefly lay out our perceptions of the interplay between Gen AI/UI as supportive tools within design practice and as quixotic polishers of incomplete concepts. We conclude that, though powerful, this approach needs designers to retain accountability, and adopt responsibilities incurred by the methodology, such as addressing overlooked requirements: e.g. coherent information architecture and consistent attention to regulatory requirements.

CCS Concepts: • **Software and its engineering → Software creation and management**; **Software prototyping**; • **Human-centered computing → Interaction design process and methods**; **Interface design prototyping**.

Additional Key Words and Phrases: Gen AI, Gen UI, rapid prototyping, accountability, governance

1 Introduction

Advances in generative AI (Gen AI) have provided tools such as vibe coding, enabling systems to produce not only content but also entire user interface elements and configurations, through generative user interfaces (Gen UI). Interfaces that AI models can synthesise, adapt and assemble in real time rather than the traditional method of a full static design in advance. We question how these technical developments will impact design practice, process, and governance. This position paper asserts that GenUI does not diminish the importance of designers but rather redefines their role. Designers are increasingly engaged as facilitators of generative systems, responsible for shaping constraints, prompts, information architectures, and feedback mechanisms that determine how interfaces develop over time. Uncertainty, interpretation, and accountability are not peripheral considerations but become integral elements of the design process. We have observed the completion of a Gen UI design process and whilst the project can not be shared the insights gleamed from the process can be.

2 The Changing Role of Designers

Traditional interaction design assumes the creation of a stable pipeline connecting upfront planning via wireframes, information architecture and pixel perfect UI mock-ups through to the final output crafted in code by developers [3, 1]. Gen UI changes this expectation as the interaction design is synthesised, adapted, or assembled in part or whole via LLM models. Likely relying in part on unobservable factors: design control is potentially handed over in part to the automated tool. Depending on the architecture, this may affect system predictability and stability. At the extreme, e.g. inline/real time generation, final interaction design through Gen UI is difficult to fully predict.

As a design tool, the use of Gen AI such as vibe coding (e.g. Lovable [4]) redistributes design labour toward steering, interpretation, and stewardship, handling: intent and framing, examples and references; iterative correction and feedback; and aesthetic and experiential judgement. This shifts design practice from upfront planning toward improvisation, and from execution toward curation and evaluation. The result is uncertain and variable across observable (time, context, users, model parameters) and typically unobservable (model characteristic, data sources) parameters.

Gen UI does not replace foundational UX work. Designers must still establish and understand core elements upfront: clear user and stakeholder requirements; the desired level of detail and outputs; contextual relevance and timing; information hierarchy; the relationship between overview and detail; and the architectural roles of regions within an application, page, or system view. These elements become structural cues, metadata, and rules

*Both authors contributed equally to this research.

Authors' Contact Information: Rachel Eardley, rachel@racheleardley.net; Emma L. Tonkin, e.l.tonkin@bristol.ac.uk, University of Bristol, Bristol, United Kingdom.

that guide how an LLM summarises, expands, or places information. Providing this structure reduces risks of information overload, mis-prioritisation, or loss of coherence in generated output. A further risk with Gen UI is that while accurate data may be surfaced, it may not be communicated effectively. for example, selecting an unsuitable format, tone of voice, or level of formality. The designer remains responsible for aligning the output with stakeholder and audience expectations, defining the appropriate communication style, and determining how information should be presented.

3 Learnings from working with Gen AI and Gen UI

To establish boundaries and consistency within the Gen UI design, the designer constrained content within a planned modular UI system composed of components, states, slots, and defined constraints. Gen AI then populated these standardised components. The designer determined where the system should remain fixed versus where generative variation was allowed. These decisions shaped the system's flexibility and encode design intent and values through constraints. Prompts are not neutral; they carry information that can implicitly shape and bias model output, including influencing communicative intent. They become a maintained, versioned and rapidly dated design artefact in their own right, acting as cross-disciplinary boundary objects shared between designers, copywriters and strategists. The designer setting relevance thresholds and decide what is surfaced, delayed, or hidden. The designer is shaping **systems of possibility**: working with behaviours, not screens; interaction grammars, not flows; constraints, not layouts. Scope for traditional evaluation, critique and hand-off is problematised, and as yet unresolved. Only when all elements are commbined does the real behaviour emerge, initiating the need for iterative beta testing with stakholders, developers and users. Precision is required to improve outputs, but is not adequate to avoid failures: this requires explicit feedback loops, permitting flagging of errors for removal or suppression and iterative modification of future behaviour. Sharing the outcomes of error flagging and response, e.g. updating of models, constraining of model behaviour, with users and stakeholders is an important curation task and a potential role for designers. Transparency about change and monitoring is an important concern feeding into governance and ongoing trust.

4 Discussion: governance and outcome

Designers are the stewards of human-centered values, trust, transparency, safety, legibility and accountability in generative systems. They must bring about data-protection-by-design and security throughout the lifecycle (GDPR article 25). The designer must be aware of system biases, for example, legacy assumptions that may no longer be appropriate in the current context, which GenAI may inappropriately propagate, e.g. software, hardware, service dependencies underline existing power/control structures [2]. Consequently, feedback loops, thresholds, and transparency remain central. Responsible adoption requires constraining the system's behaviour, ensuring that a superficially polished outcome is subjected to appropriate quality assurance and regulatory compliance (GDPR article 32). A possible approach is modular systems, enabling safer, controlled generativity with cross-disciplinary expertise, providing continuous feedback, error correction and testing. Human judgment outweighs rigid processes in evaluating generative behaviour. The legal status of the outcome is contested, due to the copyright status of generated code from most models [5], and responsibility and accountability must be clearly laid out and understood (e.g. the machine cannot meaningfully 'take the blame'). Gen UI fundamentally changes how interfaces are conceived, built and evaluated. The focus is shifting from procedural design to steering system behaviour that requires clarity of architecture, requirements, suitable data and few-shot prompts. The use of prompts encoding design intent is becoming part of the design process, with cross-disciplinary expertise becoming vital, as are feedback, error correction and transparency; effective testing; and clear positioning of responsibilities.

Acknowledgments

This work was supported by the TORUS Project, which has been funded by the UK Engineering and Physical Sciences Research Council (EPSRC) under the grant number EP/X036146/1.

References

[1] S Singh Brar. 2017. Indian Railway Case study: How to use Double Diamond process in UX. Tech. rep. https://uxdesign.cc/how-to-use-double-diamond-process-in-ux-practice-e437f3e3ce47.

[2] Luciano Floridi. 2020. The fight for digital sovereignty: what it is, and why it matters, especially for the EU. *Philosophy & technology*, 33, 3, 369–378.

[3] Daniel Gustafsson. 2019. Analysing the Double Diamond design process through research & implementation.

[4] 2025. Lovable. https://lovable.dev.

[5] Trevor Stalnaker, Nathan Wintersgill, Oscar Chaparro, Laura A. Heymann, Massimiliano Di Penta, Daniel M. German, and Denys Poshyvanyk. 2026. Developer perspectives on licensing and copyright issues arising from generative ai for software development. *ACM Trans. Softw. Eng. Methodol.*, 35, 2, Article 55, (Jan. 2026), 39 pages. doi:10.1145/3743133.