

THE PROMPT IS THE PLAN: HOW GENERATIVE AI IS OBSOLESCEING TRADITIONAL BUSINESS MODELS IN THE PURSUIT OF DIGITAL SUSTAINABILITY

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Abstract—Generative Artificial Intelligence, in short known as ‘GenAI’ is changing the patterns like how organisations plan, produce and compete, yet its consequence for the logic of traditional business models and for digital sustainability remain poorly understood. This study examines how GenAI is eroding long time business model assumptions and what this erosion does or means for sustainable digital transformation. A conceptual and theoretical approach was adopted, integrating a structured narrative review of peer reviewed research on business model innovation, GenAI and sustainable business models with a comparative analysis of four knowledge intensive sectors – software, customer service, marketing and professional services. The analysis suggests that GenAI does not make business models entirely outdated. Instead, it fundamentally challenges assumptions such as value creation scaling with labours, the scarcity of expertise, standardized delivery and strategy preceding execution. The paper introduces the ‘Prompt as Plan’ Framework where everyday language links strategic planning to day-to-day operations. It also highlights a sustainability paradox, where the perks of efficiency and digital transformation exist alongside significant burdens on energy, water, and data governance. The study proposes four testable linking billable time, outcome-based pricing, data control and environmental impact to the successful adoption of GenAI. The finding suggest managers must adapt business models prioritizing coordination, data management, and verifiable environmental responsibility, while policymakers and educators should focus on workforce retraining and clear reporting of AI’s environmental impact. The study concludes by proposing areas for future practical research.

Keywords: Generative AI, Business Model Innovation, Digital Sustainability, Digital Transformation, Prompt engineering.

1. Introduction

Historically, Business planning meant creating extensive documents before any work commencement, where high level strategy flowed from senior management to operational teams. GenAI compresses this process by letting the manager describe the strategy or feed a codebase in plain language and the resulting output arrive mostly quick, making the instruction itself an operational plan.

The shift is crucial because GenAI challenges traditional assumptions about cost and scarcity. Foundation models produce content at zero marginal cost (Bommasani et al., 2021), and show significant productivity increases, while companies face increasing demands to prove their digital transformation are environmentally sustainable (Vial, 2019; Vinuesa et al., 2020). The contribution is a conceptual framework and a set of propositions to guide empirical work and managerial practice.

Research Objectives

1. To identify which assumptions of traditional business models are being made obsolete by generative AI. This covers value creation, value delivery, value capture and strategy formation.
2. To examine how prompt-driven working, described here as the *Prompt-as-Plan* logic, reshapes strategy formation. The focus is on business model design in knowledge-intensive sectors.

3. To assess whether GenAI adoption advances or undermines digital sustainability. The study also proposes managerial and policy guidelines that align AI-driven business models with environmental and social goals.

Research Questions

1. Which elements of traditional business models does GenAI make obsolete?
2. How does the prompt-driven mode of working reshape strategy formation?
3. Does this transformation advance or undermine digital sustainability?

2. Theoretical Background

2.1 Business models and their obsolescence

A business model outlines how a company creates, delivers, and secure values (Teece, 2010; Osterwalder and Pigneur, 2010). Driven largely by technological advancements, business model innovation has emerged as a distinct area of research (Foss and Saebi, 2017). While Christensen (1997) demonstrated why market leaders struggle when new technologies shift competitive dynamics, Iansiti and Lkhani (2020) apply this concept to artificial intelligence. They argue that business built around AI driven operating models can scale rapidly without facing traditional limitations related to workforce size and process bottlenecks.

2.2 Generative AI as a general-purpose technology

Large language models affect task across most professions, with high income knowledge workers experiencing the greatest exposure (Eloundou et al., 2023). AI is transforming innovation and design by turning problem solving from an exclusively human effort into a collaborative process between machines and human (Verganti et al., 2020). Building on Brynjolfsson and McAfee's (2014) observation that digital technologies alter the value of human skills, Generative AI extends automation to creative and analytical tasks previously thought to be immune to do it

2.3 Digital sustainability

Sustainable business models embed environmental and social value alongside economic value (Bocken et al., 2014), reinforcing the triple bottom line (Elkington, 1997). Digital sustainability has two faces namely sustainability **through** digital technology, such as optimisation and dematerialisation, and sustainability **of** digital technology, such as its energy and resource footprint. Strubell, Ganesh and McCallum (2019) and Schwartz et al. (2020) show that there is a substantial carbon cost and call for efficiency in large models training to be reported along with accuracy.

3. Research Methodology

The study is interpretive and conceptual. Initially a structured narrative review was conducted of peer-reviewed articles and working papers on business model innovation, GenAI and sustainable business models. Sources were selected considering their relevance, citation standing and methodological transparency. Second, the literature was coded thematically (Braun & Clarke, 2006) against the three business model dimensions - value creation, delivery and capture, plus strategy formation and sustainability outcomes. Third, four sectors with high documented GenAI exposure were compared analytically to test whether the themes repeat across contexts. The study uses secondary evidence only and the propositions are therefore theoretical tested.

4. Analysis: What GenAI Makes Obsolete or Outdated

The thematic analysis suggests that four assumptions attached in traditional business models are eroding. Table 1 summarises the transition from traditional to GenAI driven business

Table 1: Traditional versus GenAI-driven business model logic

Business model element	Traditional logic	GenAI driven shift	Sustainability Implications
Value creation	Output scales with labour hours and specialist headcount	Output scales with compute, data and prompt quality where marginal cost of content and code falls	Less travel and material use, but higher energy and water demand
Value delivery	Standardised products, fixed channels	Mass personalisation and conversational interfaces replace forms and menus	Fewer physical touchpoints and risks of privacy and bias
Value capture	Pricing by time, unit or licence	Outcome, usage and token based pricing along with commoditisation of routine expertise	Rewards efficiency that may concentrate rents in model providers
Strategy process	Annual, document-heavy planning cycle	Continuous, prompt-driven scenario testing	Faster ESG scenario analysis and risk of unreflective automation

4.1 The labour-hour assumption

In software, customer service and content production, evidence that are experimental indicates that generative tools reduce task time and increases output quality, with the largest gains for less experienced workers (Noy & Zhang, 2023; Brynjolfsson et al., 2023). Where fees are billed per hour, such as consulting, translation and agency work, here efficiency threatens revenue. Business models based on selling time become fragile while those based on selling outcomes become attractive.

4.2 The scarce-expertise assumption

Traditionally, professional firms made money because they knew what their clients didn't know. Now that basic analysis, writing, and research can be generated instantly, value is no longer in just producing answers. Instead, value comes from defining the right problems, double checking AI works, and being accountable for final choices. Experts are still necessary, but their main job has shifted from creating content to exercising good judgement.

4.3 The standardised-delivery assumption

Mass production and mass marketing forced businesses to choose between scale and personalisation. Conversational AI eliminates this trade off by tailoring content, offers, and support to individual users in real time. As a result, customer relationships shift from rigid and one way communication channels to dynamic conversations. Staying ahead of competitors now depends more on unique, internal data and continuous feedback loops than on basic product features.

4.4 The plan-then-execute assumption

Traditional strategy separates planning from execution as iteration was expensive. GenAI makes iteration cheap where prototypes, financial scenarios and campaign variants can be generated, compared and discarded within hours. Strategy becomes an experimental loop instead of an annual event, which forms the core of the 'Prompt as Plan' logic developed below.

5. The Prompt-as-Plan Framework and Propositions

The framework has four interlinked layers. **Intent** is the strategic goal, values and constraints stated by leaders, including sustainability targets. **Prompt** is the structured natural-language specification that translates intent into instructions,

context and criteria. **Execution** is the model and human supported production of drafts, analyses and actions. **Governance** comprises human review, audit trails and impact measurement that close the loop back to intent. The quality of the plan now depends on the quality of the prompt and the governance around it and not merely on the volume of documentation.

Four propositions follow from the analysis:

- **P1:** The more a firm's revenue depends on billable time, the greater its exposure to GenAI-driven model obsolescence.
- **P2:** Firms that shift from time-based to outcome-based value capture will retain more value from GenAI-enabled efficiency gains.
- **P3:** Proprietary data and governance capability moderate the relationship between GenAI adoption and sustained competitive advantage.
- **P4:** GenAI adoption improves environmental performance only where firms measure and manage AI's own resource footprint.

6. The Sustainability Paradox

GenAI supports sustainability in several ways. It can boost emissions analysis, optimise logistics and energy use, reduce reliance on physical prototyping and travel, and lower the cost of ESG reporting (Vinuesa et al., 2020). However, the same technology consumes substantial computing resources for training and inference (Strubell et al., 2019; Schwartz et al., 2020). Efficiency gains may also trigger rebound effects, that is when content and code become nearly free, total consumption of them can rise faster than per-unit impact falls. Social sustainability is equally at stake. Task exposure may displace or deskill some workers (Eloundou et al., 2023), while bias, privacy and intellectual property risks require careful governance (Dwivedi et al., 2023). A business model can therefore be digitally advanced yet unsustainable. Genuine digital sustainability requires that environmental and social accountability be designed into the prompt-to-plan loop, not appended afterwards.

7. Discussion

The findings both support and qualify the notion of obsolescence. They support the disruption argument advanced by Christensen (1997) and Iansiti and Lakhani (2020): models built on scarce, labour-intensive production are structurally exposed when a new technology cheapens that production. They qualify it by showing that what becomes obsolete is a set of assumptions rather than entire firms. The analysis also extends the sustainable business model literature (Bocken et al., 2014). Archetypes such as maximising material and energy efficiency or dematerialising products through digital substitutes acquire a new form when GenAI is the enabler, but each carries a hidden footprint that earlier archetypes did not consider. Sustainability assessment must therefore treat the AI system as part of the business model, not as a neutral tool.

8. Implications

- **For managers:** Redesign revenue models around outcomes and subscriptions; invest in data stewardship; train staff in prompt design and critical verification; and adopt Green AI practices such as choosing right-sized models, monitoring energy use and reporting it.
- **For policymakers and educators:** Support reskilling programmes, encourage standardised disclosure of AI's environmental footprint, and integrate AI literacy and ethics into management curricula.
- **For researchers:** Test the propositions through longitudinal case studies, surveys of firms across sectors, and comparative studies of emerging economies, where digital adoption and sustainability priorities may differ from those of advanced economies.
- **For business schools:** Curricula should combine technical fluency with ethical reasoning, so that future managers can write effective prompts and also question whether an AI-generated plan is sound, fair and environmentally responsible.

9. Limitations and Future Research

The study relies on secondary evidence, and GenAI capabilities and costs are changing rapidly, so the findings should be treated as provisional. Future work may quantify the links between GenAI adoption, revenue model choice and environmental performance.

10. Conclusion

Generative AI is not ending business models; it is ending some of the assumptions that once made them work. As prompts become the interface between intent and action, competitive advantage will belong to organisations that pair fast, prompt-driven experimentation with rigorous governance and honest measurement of environmental and social impact. In the pursuit of digital sustainability, the prompt may be the plan, but responsibility for its consequences remains human.

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