HARVARD BUSINESS REVIEW

Generative AI

Research: When Used Correctly, LLMs Can Unlock More Creative Ideas

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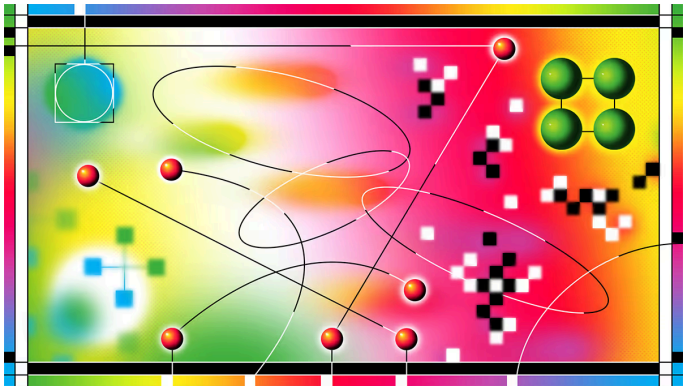

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Summary. Large language models are now central to the ideation phase, where possibilities are explored and assumptions are challenged. Their adoption for idea generation and brainstorming has surged, making these activities among the most common uses in... **more**

The rise of generative AI is reshaping not just how we work, but how we think. In our experience, many leaders focus on productivity in generative AI deployment. Generative AI will indeed make many tasks easier and quicker to perform, increasing efficiency and decreasing costs. But we think that one of the biggest promises of this technology lies elsewhere: in unlocking new forms of human creativity that can drive innovation and growth.

From product design to brand strategy, large language models (LLMs) are influencing the ideation phase—the messy, early stage where possibilities are explored and assumptions challenged. For example, in a recent survey of corporate adoption of generative AI conducted by one of us (Stefano), "idea generation and brainstorming" was the use case that made the biggest jump between 2024 and 2025 (+12%). It's now ranking in the top five most common use cases, jumping nine positions in a single year.

Are these tools simply churning out more of the same ideas, or can they unlock radical insights? And what can companies do to maximize the creativity of their outputs? This article brings together decades of research on ideation with emerging insights from the fast-growing literature on generative AI–driven creativity. We focus on how LLMs affect the early stages of creative work, specifically idea generation, and identify the conditions under which they enhance or hinder originality. Drawing on studies in consumer behavior, creativity science, and human–AI collaboration, we map AI's capabilities onto classic

creativity frameworks, introduce practical roles LLMs can play in co-creation, and offer concrete ways to use generative AI to improve the quality, diversity, and impact of ideas.

What Is Ideation, and How Do We Measure Its Quality?

Ideation is the process of generating new ideas in response to a specific goal or problem. At its core, it's about producing concepts that are both original and appropriate. The best ideas break new ground and offer practical relevance.

Originality refers to how much an idea deviates from what already exists. Some ideas are small, or incremental: thoughtful refinements to established products or strategies. Others are big, or radical: they challenge categories or introduce unexpected meanings.

Appropriateness is about feasibility: Can the idea realistically solve a consumer need or fit within existing behaviors? An idea might be wildly original but unworkable in practice, or highly feasible but lack novelty.

Ideation serves as the starting point of the innovation process: a phase where quantity serves quality. The goal is to cast a wide net, producing many possibilities. After systematic filtering and refinement, only a few high-potential ideas remain. A good ideation process increases the odds that the best ideas are exceptional—both in terms of originality and appropriateness. Yet, while AI might help every individual come up with higher-quality ideas, it can also make everyone's ideas look more alike.

How Generative AI Fuels Ideation

Generative AI doesn't just automate; it creates. LLMs generate human-like output in response to prompts, writing copy, sketching logos, generating recipes, composing music, and brainstorming product concepts.

Why might LLMs be valuable for ideation? Two pathways underlie human creativity: persistence (focused generation of many variations within a narrow space) and flexibility (the ability to combine distant concepts). LLMs emulate both, due to their productivity and semantic breadth. However, they also have drawbacks that ideators need to account for, attributable to how they are trained.

Boosting Productivity

Persistence in creativity means zeroing in on a small number of promising ideas and methodically working through them. LLMs are inherently built for persistence, generating hundreds or thousands of ideas in response to the same prompt without fatigue. This ability to be exhaustive is not just efficient, but of immense creative potential.

Research shows that LLMs can push creative output in ways previously unavailable to individuals or even groups. For example, the more ideas an LLM generates, the more original the pool becomes—up to a point, after which originality plateaus.

To produce high-quality ideas using LLMs, it's important to home in on a specific goal while filtering out distractions. Brands can tap into this targeted productivity in several ways:

- **Fine-tuning:** Training an AI model on specialized content (e.g., brand guidelines, customer feedback) to generate ideas that align closely with business context.
- **Few-shot prompting:** Showing the AI a handful of high-quality examples to steer its thinking.
- **Retrieval-augmented generation:** Allowing the AI to access real-time, domain-specific data to enrich its responses.

Combining these techniques enables the generation of new ideas that are not just original but appropriate given the brand and broader news context.

Boosting Semantic Breadth

A hallmark of human creativity is flexibility: drawing connections across distant concepts. LLMs can generate ideas spanning widely different concepts because of their semantic breadth, enabled by training on enormous, diverse datasets. When queried, they can remix concepts from countless fields in useful and often surprising ways.

LLMs are trained to generate what's most likely to come next after a prompt, which may lead them to draw on familiar patterns. For ideation, we want rare and unconventional ideas. Several techniques can help extract more creative ideas:

- **Persona modifiers:** Asking the model to adopt a specific persona (e.g., "think like Steve Jobs") can push it into new creative directions.
- **Hybrid prompting:** Breaking idea generation into smaller, varied prompts and then combining the results increases the number of parallel paths toward a solution.
- **Chain-of-thought prompting:** Giving the LLM a step-by-step process (e.g., brainstorm, edit for boldness, summarize) helps produce ideas nearly as diverse as those from humans.
- **Temperature settings:** Higher temperatures result in more unexpected ideas but also more errors. You can also achieve similar effects by crafting prompts that encourage either precision or wild creativity, e.g., "Give me the most unconventional and surprising ideas you can think of."

Human ideation often toggles between focused persistence and broad flexibility. LLMs can be prompted to switch between these modes, just as humans do.

Reimagining AI's Roles in Creative Thinking

Beyond technical prompting tactics, there's a bigger question: What roles can generative AI play in the ideation process? Unlike traditional brainstorming, where idea generation is typically human-driven, AI invites a new model of co-ideation between people and machines.

Sometimes the AI serves as the main idea generator, with humans evaluating and refining. Other times, the human is in charge, with AI acting as a catalyst. Today's AI models tend to excel at producing many ideas, particularly small, incremental ones, but they still lag humans when it comes to generating big, breakthrough ideas. This suggests a strategic rebalancing: If you're exploring broadly or looking for volume, AI can take the driver's seat. If you're aiming for bold, high-impact ideas, humans may need to lead, at least for now.

To make these roles clearer, we propose a set of metaphorical "ideation roles" for LLMs. These roles are flexible and can be used to boost either the productivity of idea generation or its semantic range.

LLM as Lead Ideator

The Designer: LLMs can assist ideators by versioning, creating personalized variants for different individuals or use cases. They can also help with multivariate testing, by spinning up dozens of systematically varied messages and flagging hidden variables that might accidentally influence marketing or other outcomes.

The Writer: LLMs can elevate the perceived quality of ideas by shaping how they are received, understood, and valued. They can make ideas clearer, more persuasive, and more impactful.

LLM as Thought Partner

The Interviewer: LLMs can act as "Socratic" interviewers, asking the right questions to nudge you to think more flexibly, detect blind spots, or explore new directions.

The Actor: LLMs can serve as "actors" that roughly imitate customers, providing realistic responses that help you better understand needs, preferences, and mindsets. However, their personas may be influenced by dominant online voices and may not represent all groups accurately.

How Generative AI Will Reshape Idea Markets

The adoption of generative AI will not just change how individuals brainstorm, but reshape entire fields, including marketing, product innovation, and business strategy. For example, a respondent in our adoption survey, a manager in a technology firm, said, "Over the past year, one of the coolest ways we've used gen AI is in speeding up our product design. It helps generate fresh ideas and visual concepts based on what customers are really looking for, so we can get new products out faster and more aligned with market trends." Firms like General Mills see great potential for generative AI to improve and speed up the innovation process, as one of us (Stefano) describes in a recent

HBR article on the use of synthetic personas in market research, which relates to the Actor metaphor described above.

But while LLMs can boost the creativity of individual users, they might also reduce the overall creativity of groups—raising the bar for what counts as original. Competitive forces tend to reward ideas that truly stand out. Using techniques like hybrid prompting or persona variation can help unlock more distinctive ideas. Organizations may even invent new ideation roles for LLMs, such as mining past data for untapped insights or surfacing overlooked hypotheses.

Another emerging challenge is how we evaluate the quality of ideas, not just generate them. It's often unclear which ideas will succeed until they're tested in the real world. Some researchers are exploring whether LLMs can predict idea potential upfront, opening the door to using AI for both brainstorming and evaluating ideas by predicted impact. However, applying such systems isn't straightforward. Truly original but unconventional ideas may not score well early on. If early screening tools favor only what's familiar, companies may inadvertently filter out breakthrough ideas.

The biggest promise of LLMs may be in helping us break out of our own mental ruts. Generative AI could push leaders and organizations to rethink entrenched strategies and explore radically different possibilities.

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Generative AI is no longer just a back-office tool for automation; it is becoming a frontline collaborator in how businesses create, explore, and innovate. As this technology enters the ideation phase of the creative process, the question is not whether it can help generate ideas, but how well it can do so, and how wisely humans can guide it.

LLMs are most powerful when used deliberately: to scale idea generation (productivity), to break through habitual thinking (semantic breadth), and to take on flexible roles—from designer and writer to interviewer and actor. Without a thoughtful approach, organizations risk crowding around the same "best" ideas, reducing diversity, and missing the kinds of big, unexpected innovations that define industry change. The future of ideation is not just working in concert with machines, but doing so in a way that smartly maximizes the best of what each can bring to the table.

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