BCG

Weekly Brief

September 26, 2023

What We Have Learned About Human-AI Collaboration

We are closing in on the first anniversary of the public release of generative AI tools such as ChatGPT and GPT-4. Understanding the ever-changing field of human-machine collaboration is critical for future success, but few companies have a grasp on this interplay.

My colleagues at BCG, together with scholars from Harvard Business School, Wharton School at the University of Pennsylvania, University of Warwick, and MIT Sloan School of Management, have conducted a first-of-its-kind study of human-machine collaboration. It is a complex relationship that will surely evolve over time. As the technology improves, and as we become better at using it, we will likely observe different results and outcomes.

The team explored how humans and AI performed in two scenarios testing popular uses of GenAI. First, in business problem solving, participants were asked to assess the performance of a company and develop a plan to optimize revenue and profitability. Second, in creative product innovation, participants were asked to generate

ideas for a new type of shoe in an underserved market. The results revealed that many of our assumptions about GenAI may be wrong. Specifically:

Humans are better at problem solving… and we should trust our abilities. The business problem solving scenario had a clear right answer that participants readily discovered on their own weighing several qualitative and quantitative inputs. The answers given by GPT-4, on the other hand, were often wrong even if convincing. Unfortunately, humans—even those who had received training in the technology—were often misled and did not push back on the results when they could have. While this picture might change as the technology becomes more sophisticated, for now there is a clear limit to the accuracy users can expect in this context.

Machines are great at creative tasks… but there's a catch. Participants who used GPT-4 to ideate a new shoe design had more compelling answers than those who did not use it at all and those who tried to "improve" on its output. The performance gap between the highest and the lowest performers also shrank when using GPT-4. But beware the creativity trap: People using GPT-4 came up with better individual answers, but collectively their ideas were 41% less diverse compared with those who did not use GPT-4. The logic extends to companies within an industry, too: those who use the technology, applied to the same data, are likely to get similar answers over time.

"People seem to mistrust the technology in areas where it can contribute massive value," the BCG authors wrote, "and to trust it too much in areas where the technology isn't competent"—at least not yet.

This study is both promising and sobering in its implications.

- **Build a hiring, training, and reskilling plan.** These activities are often viewed as answers to many of the challenges of GenAI. But they are not easy answers. Finding the best individual at using GenAI is different from hiring the best at doing the underlying task. Organizations will also

need to continually train employees on when and how to work with GenAI in this fast-moving environment.

- **Use GenAI technologies selectively and check your results.** Organizations should be constantly testing those tasks that will benefit from GenAI—and those still beyond its technological frontier of competence. They also need to monitor the frontier's ever-shifting border.

- **Protect diversity of thought.** Human ideation still has, and will likely continue to have, an important role. In the experiment, the overlap between machine-generated and human-generated ideas was less than 10%. The challenge will be to identify promising ideas, whatever their source.

- **Build data advantage.** Unique data sources will produce unique answers. When multiple firms use GenAI across similar sets of tasks, they could end up with undifferentiated results. Leaders can build an organization's overall competitive advantage by fine-tuning GenAI models with large volumes of proprietary, high-quality, firm-specific data.

The power of GenAI is yet to be fully realized. It is fair to say we have not quite grasped its full potential. Still, I come back to BCG's 10-20-70 framework for AI and tech transformations: 70% of the effort should be dedicated to helping a company embrace the change within the organization. We can have the most sophisticated models in the world, but if we do not learn how to use these technologies in the right way, we will not scratch the surface of the value-generation potential.

Until next time,

Christoph Schweizer
Chief Executive Officer

Further Reading

How People Can Create—and Destroy—Value with Generative AI

A first-of-its-kind scientific experiment finds that people mistrust generative AI in areas where it can contribute massive value and trust it too much where the technology isn't competent.

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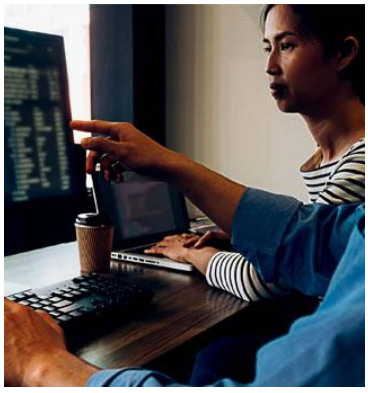

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