BCG

Weekly Brief

September 11, 2024

Pushing GenAI's Limits to Expand Capabilities

Since GenAI's arrival less than two years ago, we have worked with hundreds of clients on GenAI projects. We have also used ourselves—through our own consultants and functional teams—as a test kitchen to see what works. Most recently, our think tank, the BCG Henderson Institute (BHI), completed a second A/B field test to understand how humans and GenAI can work together effectively and to evaluate the risks.

Our first study, published in September 2023, assessed how GenAI could help workers with tasks they knew how to complete on their own. BHI's latest study tests how workers can use GenAI to complete tasks that they are not formally trained to do on their own. The first study focused on productivity, the second on capabilities.

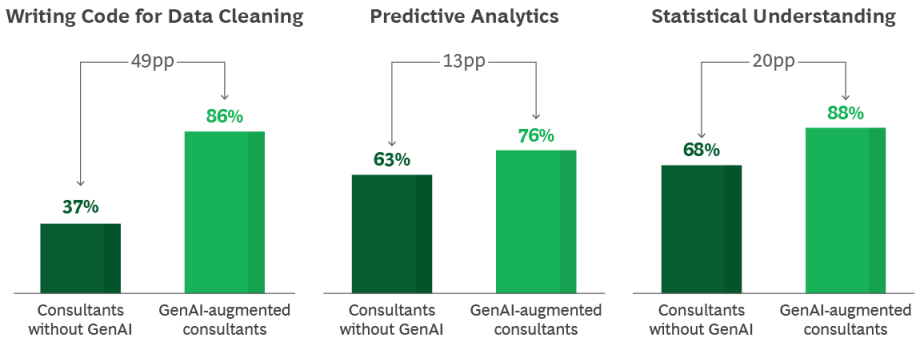
Specifically, the goal of the exercise was to understand whether organizations can use GenAI to expand the capabilities of their people, how to manage the risks of human–GenAI collaboration, and how to manage talent in this setting. We compared two sets of BCGers: generalist consultants and advanced data scientists. Half of the generalist consultants used GenAI; half did not.

The study assessed the ability of participants to complete three data-science tasks that could not be fully automated with GenAI: 1. coding to clean data; 2. building a predictive sports betting tool; and 3. judging whether statistical outputs generated by ChatGPT were meaningful. They had 90 minutes to complete each task.

Consultants who used GenAI to complete the coding task achieved an average score of 86% compared to the 100% benchmark set by data scientists, a surprising 49-point improvement over

participants not using GenAI (37%). The GenAI-enhanced consultants outperformed their peers on the other two tasks as well, though by smaller margins—13 points and 20 points, respectively.

GenAI Significantly Improved Performance in Three Data-Science Tasks



Performance of consultants on tasks outside their capabilities[1]

Sources: Boston University; OpenAI's Economic Impacts research team; BHI analysis.

[1]All scores are normalized so that 100% is equivalent to the benchmark set by the average scores of participating data scientists.

The coding task was well suited for GenAI-enhanced consultants to excel. GenAI is highly adept at coding, and consultants often perform data cleaning using no-code tools such as Alteryx, so they were more likely to recognize a correct output. But even in the other two tasks, where the margin of improvement was smaller, GenAI served as a valuable brainstorming and performance improvement partner, assisting consultants in achieving scores of 76% and 88% of the benchmark, respectively.

While reaching these scores is significant, data scientists or other experts will still have to check and improve the work of generalists to fully close the gap. It will take teams of employees with different skills to harness GenAI's strengths and maintain quality control.

What This Means for Organizations and Employees

Though we chose to study data science because we have several hundred expert data scientists on staff to serve as a benchmark, the results could apply to other disciplines with implications for all organizations:

Expanding the Talent Pool. When GenAI augments individual performance, organizations have a larger and more fungible talent pool for skilled knowledge work. They can potentially minimize turnover costs and enable cross-pollination throughout teams and

disciplines.

Expertise Remains Critical. Even for tasks that GenAI–enhanced employees can handle well, subject matter experts will still play a vital role in overseeing and checking the quality of their work.

Developing an Engineering Mindset. GenAI-augmented participants with moderate coding experience performed 10 to 20 percentage points better on all three tasks than their peers, even when coding was not required. This implies that an engineering mindset—for example, the ability to break a problem down into smaller pieces that can be checked and corrected—is likely a valuable skill for organizations to develop in their broader employee base.

Encouraging Employee Engagement. Four of five consultants who regularly use GenAI at work said the technology made them feel confident in their roles and enhanced their problem-solving skills, according to the study. Properly managed, this tool enhances employee engagement.

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We still have more to learn about how people and GenAI can best work together. While we don't have all the answers, we are committed to sharing whatever insights we develop as we take our own advice and work to transform rapidly with GenAI.

Until next time,

Christoph Schweizer
Chief Executive Officer

Further Insights

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A new experiment shows that GenAI isn't just a tool for increasing productivity—it can expand the range of tasks workers can perform.

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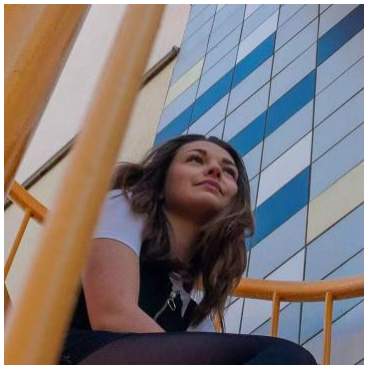

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