Gartner

How Generative AI Productivity Will Change Your Workforce

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Generative AI (GenAI) has the potential to revolutionize productivity,[1,2,3,4] but not all workers will benefit equally. When two people in the same role use the same GenAI tools, one may become more productive and the other less so. Executive leaders must therefore deploy the technology selectively and partner with HR to prepare for and shape the resulting workforce impacts.

But how can organizations solve this GenAI productivity puzzle? Of course, a suitable use case, robust technical implementation and high-quality data are essential for any initiative to succeed. However, our research revealed two additional keys to generating consistent AI productivity returns. Both of these factors relate to how people respond and change when interacting with GenAI:

- **Career experience of the worker,** ranging from a newly hired apprentice or graduate to someone with 25 to 40 years of experience
- **Complexity of the function,** from low-complexity areas such as customer service to highly complicated ones such as corporate finance or software engineering[5]

Some media commentaries suggest that GenAI either lifts the performance of only lower-tier workers or uniformly escalates everyone's productivity.[6] But we found the largest gains occurred in the zone of deep productivity, which stretches from **low experience, low complexity** to **high experience, high complexity** (see Figure 1).

Workers within Figure 1's zone of deep productivity will likely become significantly more productive when enabled with GenAI. Those outside the zone will not.

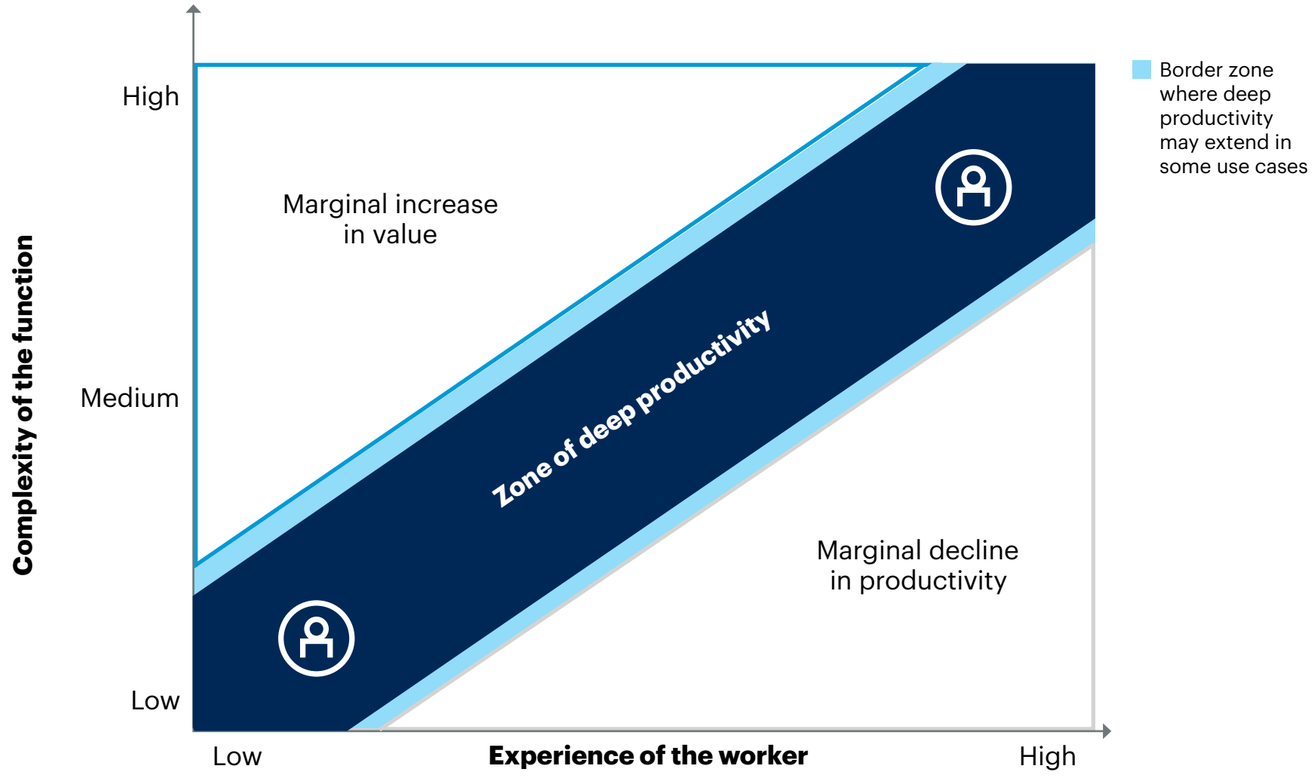
In general, workers in the high experience, low complexity triangle experienced a marginal but significant productivity decline, becoming slower after the GenAI tool was implemented. Those in the low experience, high complexity category became slightly more productive, but the gain was less pronounced than in the two positive areas in the zone.

GenAI is not just a technological shift; it's a human-centric transformation that redefines how we achieve productivity.

New Workers Doing Less Complex Tasks Learn Faster

At one business process software company, there were dramatic GenAI-assisted rises in productivity among new customer service agents.[7] Workers with just two months of experience using the tool performed at levels comparable to those of agents who had been in the role for more

Figure 1. Deep Productivity Matrix
Illustrative



Source: Gartner

than six months without GenAI. After six months, the GenAI-assisted worker's performance was approximately 50% greater than that of colleagues not using GenAI.[7]

We term this phenomenon "experience compression," where GenAI significantly reduces the time required for workers to become proficient — and not merely because they become better at copying and pasting from GenAI outputs. During the study, the GenAI system sometimes went offline unexpectedly for up to a few hours. Initially, the outages affected productivity, but after three months of using the tool, something remarkable happened.

Despite the system being offline, the productivity and customer satisfaction scores of these less experienced agents did not decline. This outcome strongly suggests that GenAI was *teaching* them how to perform their jobs better at a highly accelerated rate. The productivity gains were a secondary effect of this rapid learning process, driven by GenAI's ability to impart knowledge and skills efficiently.

Experience compression through GenAI is revolutionizing the learning curve, turning years of experience into months of training.

Experienced Workers in Complex Roles Become More Creative

It seems counterintuitive to suggest that GenAI could make a CFO more productive, given the varied and intellectually demanding nature of the role. However, this perception misses a critical point. While traditional tools like robotic process automation excel at repetitive, low-level tasks, GenAI can magnify the skills of an experienced CFO engaged in higher-order thinking work. For instance, consider the preparation of a monthly board pack — a comprehensive consolidation of a company's financials, accompanied by deep analysis and strategic guidance.

If a junior management accountant were to receive a GenAI-generated board pack, they might think their work is done. By contrast, a seasoned CFO would critically evaluate the report, identifying areas that need adjustment and sections requiring further analysis. Most importantly, they could find and expand on valuable GenAI insights they may never have thought of, or not thought of as quickly. In this way, GenAI serves as a sounding board, enhancing the CFO's thought process and creativity.

GenAI's true power lies in its ability to teach and inspire creativity, not just automate and execute.

For a CFO, the value of GenAI lies not in time savings but in better strategic decisions. Those could include using the technology to more effectively consider the value and impact of an acquisition or divestiture from multiple angles. GenAI might suggest counterpoints to a major decision, thereby increasing strategic inventiveness and quality. In this way, the CFO uses the technology to create their own new ideas before they have thought of them. The symbiotic relationship between the CFO's thoughts and GenAI fundamentally enhances their creativity. The value of time saved for this type of worker is irrelevant compared to GenAI's potential impact in skill magnification.

What Executive Leaders Should Do

Understanding the variable productivity impacts of GenAI is crucial for maximizing its potential. The technology may significantly benefit only a minority of your workers, while potentially decreasing performance or causing issues for others. For example, junior software developers using GenAI without adequate oversight have sometimes produced fundamentally flawed code, damaging productivity and quality.

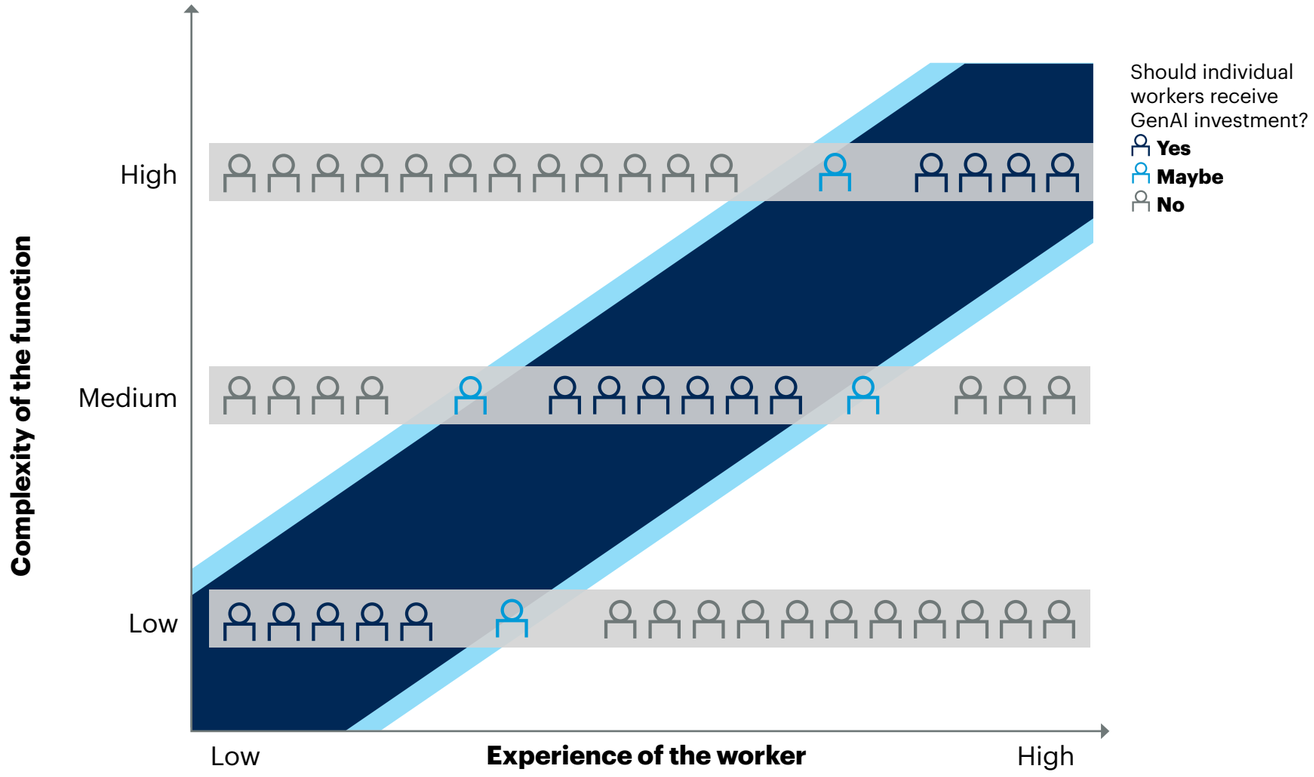
While the size and shape of the deep productivity zone will vary between organizations, executive leaders and CIOs should target their GenAI investment at workers who fall within it (see Figure 2).

This strategy will have profound implications for workforce management. **As immediate priorities,** C-level executives should:

- Collaborate with HR leaders to get a clear picture of the workforce by complexity of function and experience in role. Use that matrix as a heat map to identify which workers fall into the zone of deep productivity.
- Focus on identifying use cases for worker groups inside the zone, and where there is a wealth of data describing good and bad practices and outcomes. This information is crucial for teaching low experience workers in low complexity roles.
- Evaluate the expected benefits of each use case in light of your unique employee demographics, and realize that returns may be much higher or lower than for other companies doing the same thing.
- Prioritize uses where you currently have more employees with low experience in low complexity roles or high experience in high complexity roles. For use cases where the existing workforce is outside the zone, pause for further impact assessment.

Organizations must decide: adapt their workforce to fit GenAI, or adapt GenAI to fit their workforce.

Figure 2. Where to Deploy GenAI to Realize Productivity Gains
Illustrative



Source: Gartner

Looking further ahead, recognize that the ideal worker profile for each role will shift over time and the optimal mix of low-, mid- and high- experience employees will change in areas impacted by GenAI.

Executive leaders therefore face a critical decision:

- maintain their current workforce demographics and deploy GenAI selectively, or
- compress the distribution of experience and complexity to maximize the number of workers in the deep productivity zone.

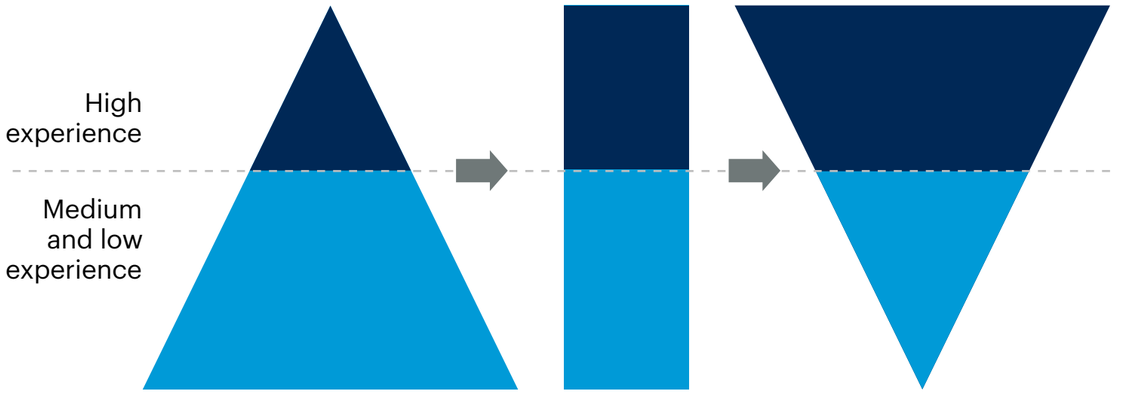
All CxOs should partner with HR leaders to match job roles and requirements to the impact of the GenAI tools. If you decide to alter the mix of your workforce to maximize productivity gains, then prepare for changes in organizational structure. Consider a pyramid-shaped software development function, with senior architects at the top and a larger number of junior coders at the bottom. If GenAI magnifies the productivity and capacity of senior architects, this will put pressure on those at the bottom, potentially changing the structure of the workforce to a column or even an inverted pyramid (see Figure 3).

Changing the workforce's composition will affect employee retention, development and labor costs. Prepare for two challenges:

- **Talent race at the top:** Many highly experienced workers in high-complexity roles will become more effective and valuable with GenAI, leading to increased demand for this talent.
- **Accelerating experience for junior staff:** Organizations must find ways to speed up the learning of less experienced workers, enabling them to handle complex GenAI outputs and take advantage of its productivity potential.

GenAI will change your workforce, regardless of whether or not you try to adjust your mix of employees. Either way, you've got work to do to maximize productivity.

Figure 3. Possible Changes in Workforce Composition Due to Generative AI Productivity
Illustrative



Source: Gartner

[1] Nestor Maslej and others, The AI Index 2023 Annual Report, AI Index Steering Committee, Institute for Human-Centered AI, Stanford University.
[2] Fabrizio Dell'Acqua and others, Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality, Harvard Business School.
[3] The Economic Potential of Generative AI: The Next Productivity Frontier, McKinsey Digital.
[4] Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence, Science.
[5] Gartner has observed these effects in conversations with hundreds of executive leaders throughout 2024, and in extensive academic studies, some of which are noted here.
[6] Generative AI And The 'Great Averaging,' Forbes.
[7] Generative AI at Work, National Bureau of Economic Research.

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