cognizant

The trillion-dollar question:

What to do with the workforce in the age of gen AI

As generative AI improves productivity and disrupts jobs, business leaders must rethink the value of job roles and the talent pyramid to align workforce strategies with the evolving landscape.

Table of contents

Executive summary

Viewed from a distance, human progress looks like a story of steady gain and acquisition. From the wheel to the steam engine to electricity to the computer, every new technology has added to humanity's supply of productivity-enhancing tools that let people do more with their time and their talents. New tools have consistently offered new ways to be productive, leading to the emergence of new types of work, careers, organizations and, often, entire industries.

Look more closely, though, and it becomes clear many of these miracles of addition began with an act of subtraction. Technology ultimately introduces new work and new value, but it also takes away work that existed before.

The latest addition to humanity's toolkit is generative artificial intelligence. As with previous technologies, it will be a story of not just simple subtraction but also addition and even multiplication. While certain job roles will be fully automated by the technology, there are far more opportunities for job roles to be enhanced, augmented and transformed by generative AI.

This pattern was evident in our most recent research study New work, new world, in which we partnered with Oxford Economics to model the economic impact of generative AI on the world of work. Our study forecasts generative AI will inject $1 trillion in annual productivity growth by 2032 into the US economy. But along with those productivity gains, the vast majority of jobs (90%) will be impacted in some way in that timeframe, and over half (52%) greatly so.

The question is what this impact will look like and how businesses can plan for it:

What kinds of jobs and job tasks will gen AI take over, and which will remain in human hands?

Which human skills will increase in value, and what new skills will become necessary?

How can businesses foresee which jobs will be enhanced, augmented, transformed or fully automated?

How will this transformation affect talent models and skilling needs, both now and in the future?

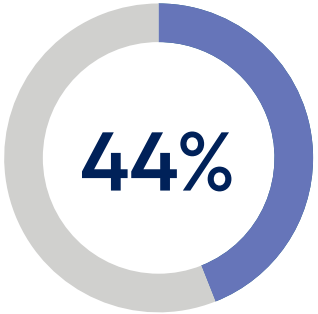
Executive summary

Our study provides a solid basis to answer questions like these. Using the 18,000 tasks and job roles defined in the O*NET database (the primary source of occupation data in the US), we analyzed 1,000 professions to calculate an "exposure score" for each. The score represents the percent of job tasks for each that could be automated or assisted by generative AI by 2032, weighted by the relative value, or importance, of those tasks.

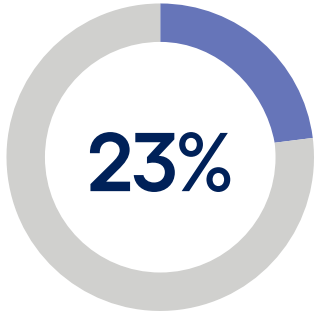
Based on the insights gained through this methodology, it's clear there will be vast changes to workforce structures and how work gets done. To fine-tune the transformation, business leaders will need to understand generative AI impacts at a task, skill and job level, and then create a talent management strategy that allows people to deliver value to the business in a new way.

Already leaders are plotting their course. We followed up on our "New work, new world" research with a global study, in which we asked 2,200 business leaders in 23 countries and 15 industries about their generative AI strategies. When we asked respondents about their plans for workers displaced by generative AI, only 2% said they planned to lay off employees. Instead, many plan to find existing roles within the organization or retrain people for new roles created by generative AI (60%). Other plans are to offer displaced workers generative AI training to increase their productivity (32%) or create mentorship programs or other support initiatives (23%).

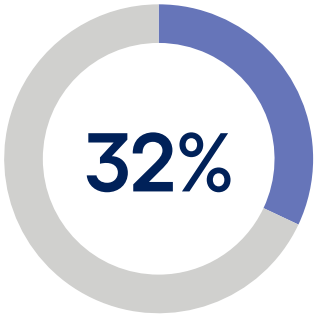
All of this will require significant attention to talent management strategies. In this report, we'll provide a framework for leaders to assess jobs across their workforce to understand which tasks will be most impacted by generative AI, the importance of those tasks and how automation will change the value of the job role and the talent pyramid. Using this assessment, they can categorize the workforce into job groups to design best-fit skilling strategies and talent models for the generative AI age.



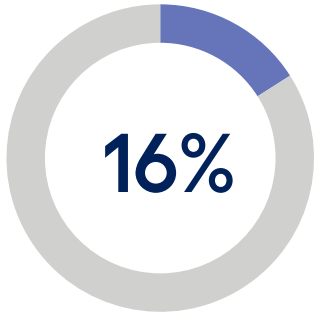
Find existing roles with the organization



Create mentorship programs or other support initiatives



Offer training and tools to improve productivity with gen AI



Retrain to move into new jobs created by gen AI

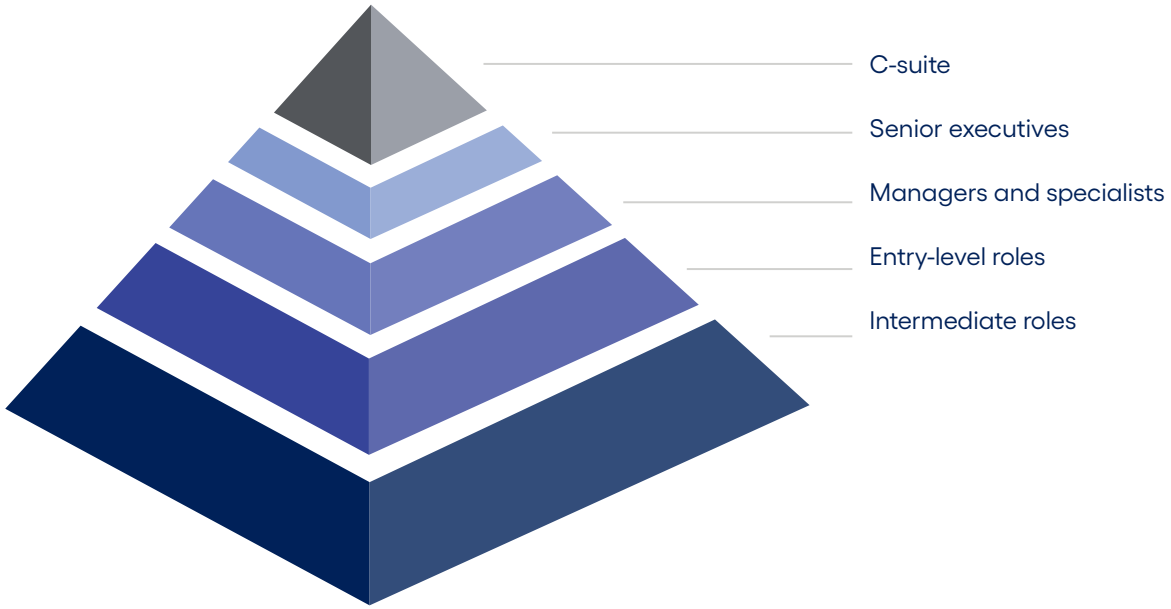
Seismic changes to job value and the talent pyramid

Seismic changes to job value and the talent pyramid

To understand the impact of generative AI on the workforce, we first need to look at two critical and deeply interconnected dynamics: the changing value of specific job roles and the impact on the talent pyramid.

When it comes to AI automation, it's not just about the number of tasks that can be automated in a particular job role but also how central those tasks are to the role's core purpose. If lots of low-value tasks are automated, for example, the job role will change to some degree, but its value will be relatively untouched. But if AI can perform enough high-value tasks, the job role and its value will see radical change. These dynamics will inform the talent strategy that's most relevant for the people in each job role.

Additionally, these value shifts will also influence the shape of the talent pyramid. The talent pyramid represents the distribution of roles across different levels of seniority—typically with a broad base of junior roles that that narrows as you move up to more senior or more specialized positions.



Seismic changes to job value and the talent pyramid

Generative AI could reshape this pyramid in a variety of ways. In some cases, it could narrow the base of the pyramid by diminishing the number of people needed in highly automatable roles. In others, it could also allow people in these roles to acquire skills more quickly and rapidly ascend to higher value roles, effectively widening the middle of the pyramid.

Over time, as more junior-level employees enter the workforce with generative AI skills honed at educational institutions, it may also shift what entry-level work looks like and where in the talent pyramid it's performed.

Conversely, as the value of certain senior roles becomes more contingent on tasks that AI cannot easily replicate—such as strategic decision-making, complex problem-solving and vetting and validating AI outputs—as well as big-picture responsibilities like judgment, taste and accountability, the demand for these highly experienced professionals may increase. This will enlarge the traditionally narrower top levels of the pyramid.

In essence, the changing value of job roles due to AI-driven automation won't just alter individual roles; it will also transform how talent is distributed within an organization.

Leaders need to anticipate these shifts, ensuring that their talent pyramid remains aligned with the organization's evolving needs—balancing between the automation of tasks and the human expertise required to perform work in these newly transformed ways.

Tailor your talent strategy for four workforce groups

Tailor your talent strategy for four workforce groups

Using the job tasks defined in the O*NET database and our analysis of the exposure scores for an array of professions, we've categorized the typical workforce into four broad groups based on how they'll be impacted by generative AI.

Each group will see the value of their job role change to a greater or lesser degree. With workers' changing roles and shifting job value, each cohort will have a different impact on organizational talent models and will require a different approach to skilling.

It's important to note that these categorizations present a broad macroeconomic view, and that reality is more nuanced. The roles and tasks defined by O*NET, for example, may not always map perfectly to a business's own job roles and tasks. Further, based on company culture, leaders at different companies may make entirely different choices about the same role, depending on their business strategy.

For example, although it's been possible to fully automate some customer service functions for some time, many companies have chosen not to. So even while customer service representatives could fall into the "fully automated" category based on our analysis of their exposure scores, many companies would place them in the "augmented" category, leaving them to work with a new gen AI toolbox rather than be replaced by it. Or they could land in the "transformed" category in businesses that choose to reskill customer service agents for entirely new roles.

Nevertheless, this broad view provides a framework for executives to assess job roles within their teams and determine the appropriate actions for different employee groups.

Fundamentally unchanged

Gen AI impact
Little or no impact on high-value tasks, while some peripheral and adjacent job tasks are enhanced. The fundamental way the job role is performed, and the value of the role, is unchanged.

Talent strategy
Upskill with training on gen AI fundamentals.

Augmented

Gen AI impact
Big impact on many lower-value tasks, as well as a few higher-value tasks. The job role and its value will shift moderately.

Talent strategy
Upskill with training customized for the new way work is done.

Transformed

Gen AI impact
Substantial impact to so many high-value tasks that some skills will become obsolete. Both the job role and its value will change significantly.

Talent strategy
Reskill, both for hyperspecialized ways of doing work and to transition into new roles.

Fully automated

Gen AI impact
Disruptive impact to most work tasks, dramatically reducing and potentially eliminating the value of the role.

Talent strategy
Reskill and upskill to higher-value job roles or retire the role.

Jobs that are fundamentally unchanged by AI

Summary

These occupations tend to involve physical work, either hyperspecialized tasks that require years of training and education to perform, such as surgery and electrical or plumbing work, or non-specialized tasks that require little experience, such as custodial work.

While generative AI will impose little change on these professions' core—and highest value—tasks, it will likely impact adjacent tasks that will improve the quality of their work and how much of it they can do.

Highlights

Automation: Very low-level or peripheral tasks

Types of workers: Professionals who perform physical or highly specialized work, from surgeons and anesthesiologists to plumbers and electricians.

Job impact: Minimal to none

Talent strategy: Upskill on gen AI fundamentals

Generative AI will have little impact on manual work, especially when it's highly specialized. It's mainly lower-value and peripheral tasks, like writing patient notes in the case of a surgeon, that could be augmented by generative AI.

The technology will, however, change the work that happens around the job role. For a surgeon, this could include medical diagnostics or more personalized patient communications and follow-up care. The quality of the work performed would also increase as the systems the surgeon uses evolve to provide more information on the patient, the best treatment approach and the latest clinical research and procedures—in effect, surfacing the highest value and most relevant insights from the vast quantities of data available.

Specialized training in generative AI is not a top priority for this cohort. However, understanding the basics of generative AI, ethical considerations and how to collaborate with AI tools can help these professionals integrate technology into their workflows, boosting efficiency without changing their core job functions.

There may be a very slight reduction in the number of workers needed as generative AI enables tasks to be completed more quickly. But overall, the traditional staffing pyramid remains intact, as workers in this cohort will continue to need to develop seniority over time as they accrue hands-on experience and knowledge.

Jobs that are augmented by AI

Summary

The augmented cohort will see low-value tasks automated to a greater extent, driving significant change to how they do their job. While AI will assist with some higher-value tasks, core tasks associated with the job role will continue to be done largely by humans.

Production-based skills, like writing early drafts and summarizing, will diminish in value, while decision-making, communication, collaboration and problem-solving will become more valuable.

Highlights

Automation: Many lower-value tasks; a few higher-value tasks

Types of workers:
- Creative staff (from junior graphic designer to head of creative)
- Educators (from teaching assistant to principal)
- Lawyers (from junior/trainee attorney to general counsel)
- Senior business leaders (operations VP to CEO)

Job impact: Moderate

Talent strategy: Upskilling on generative AI tools, with customized training in the new ways of doing work with these tools

When generative AI first emerged, a key differentiator was its ability to produce creative outputs like marketing copy, poetry and visual designs. As a result, roles like art directors, creative managers, copywriters and designers seemed under threat of being fully automated.

Now, that threat seems to have abated, and not only because image-generating AI models still produce outputs that can be fantastical and unrealistic vs. authentic and natural. It's also because these powerful tools can't produce anything at all until somebody tells them what to produce. That work, most companies have discovered, is best performed by someone with the ability to conceive of and express a clear set of instructions for an excellent piece of design: in other words, a designer or creative director.

The same goes for other augmented roles. For teachers, AI can accelerate tasks like lesson planning and homework assignments. For lawyers, it can help analyze precedents and prepare briefs and file appeals. Business executives, meanwhile, can lean on generative AI for tasks such as preparing and approving budgets and reports, and analyzing business operations.

Tailor your talent strategy for four workforce groups

But while the skills required to perform automatable tasks will diminish in value, those associated with non-automated tasks will grow in value as these professionals will have the bandwidth to refine these uniquely human capabilities.

Teachers will become more focused on engaging students and personalizing learning experiences. Lawyers will shift their emphasis to presenting cases, negotiating settlements and advising clients, where complex problem-solving and interpersonal skills are crucial. Similarly, business leaders will apply more empathy and decision-making to drive strategic initiatives.

Generative AI tools can significantly boost both the productivity and quality of the work done by these professionals. This is especially true at the lower levels of the talent pyramid, where less experienced people can more quickly reach higher skill levels using generative AI tools than it would take to develop these skills on their own.

The most pressing skilling concern is to augment workers with the tools and training they need, such as prompt writing, to deliver more value from an existing range of tasks.

Because gen AI can automate so many low-level tasks done in these job roles, there could be a diminished need for the number of people performing routine tasks. However, over time, as junior workers acquire generative AI skills on the job—or enter the workforce with these skills—it could change the nature of what bottom-of-the-pyramid work looks like, pushing it up toward the middle of the pyramid.

These dynamics could also increase the need for senior professionals who handle more complex responsibilities that involve judgment, verification or quality assessments, collaboration or strategy.

Jobs that are transformed by AI

Summary

Change is far more sweeping for this group. Many high- and low- value tasks can be automated by generative AI, leaving workers with a handful of important tasks to fulfill—but perhaps not enough to justify a full-time position.

As a result, these jobs will evolve completely. They may reorient or recombine based on the remaining high-value tasks that need to be done—as well as new tasks necessitated by the use of generative AI—or they may shift into hyperspecialized roles requiring specific skillsets.

Highlights

Automation: A large number of low- and high-value tasks

Types of workers:
- Programmers (junior developer, to head of programming)
- Financial analysts (junior analyst to head of research/ portfolio manager)
- Technical writers (documentation specialist to technical director)

Job impact: Significant

Talent strategy: Reskilling to move into entirely new roles and jobs

While generative AI can perform many of the key tasks of these job roles today, the new types of work that emerge will be extremely high-value—if people are reskilled to do it.

For example, many of the highest value tasks performed by computer programmers are very likely to be automated by generative AI, including writing code. But the need for an analytical skill set and understanding of system design won't go away.

The role won't disappear—it will be transformed, increasingly centering on high-value human skills such as communication, collaboration and problem-solving. An example is computer programmers becoming more focused on iterative, fast-paced development. They'll need to sit down with business users, co-designing solutions on the fly and making changes based on the real-time results they see.

Tailor your talent strategy for four workforce groups

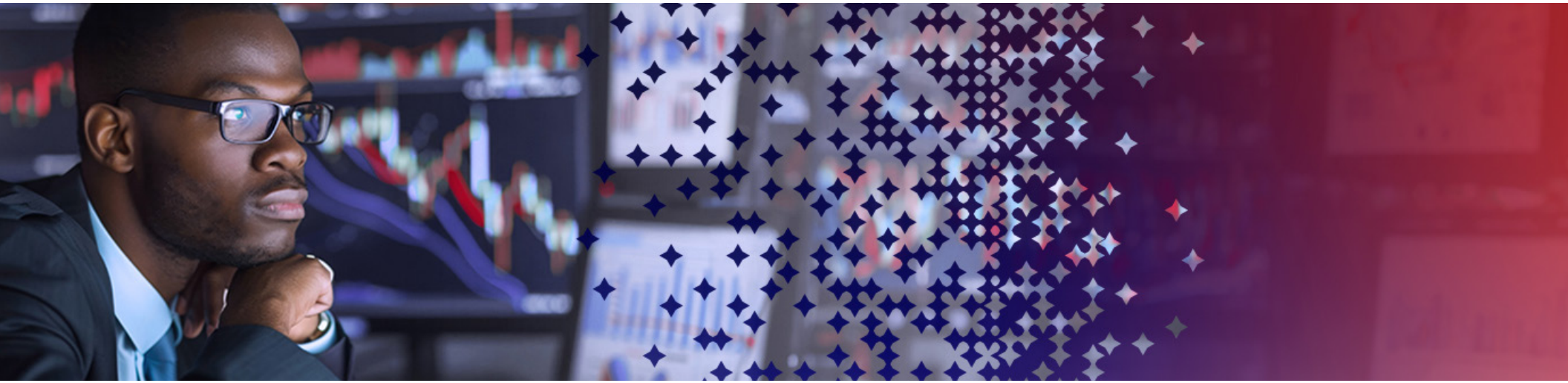
They'll also bridge gaps between programming, engineering and technical teams to foster a more integrated and cohesive development process.

The impact on talent pyramids is significant. If 80% of a job is automated, for instance, companies may not need as many of those employees. But at the same time, new jobs will emerge—often at the middle layers of the pyramid.

For example, companies might create a pool of hyperspecialized workers who perform the 10% to 20% of tasks that could not be automated across multiple job roles. One example is a new job role created by combining the nonautomatable tasks that remain for both software developers and software testers.

Or they may choose to create entirely new job roles. As financial analysts spend less time doing highly automatable tasks like analyzing data and compiling research notes, for instance, they could focus more on working with investment bankers to attract new clients, presenting reports and acting as the source of truth for asset pricing. But they could also move into new roles such as becoming an expert in articulating the value of the company's assets and products.

In still other cases, jobs will become hyper specialized on high-value tasks or tasks that emerge through the use of AI. Consider that if 50% of a job can be automated, workers can focus 100% of their energy on the remaining tasks, spiking their productivity. This could come in the form of programmers using AI toolsets to produce better software than ever or financial analysts translating information into recommendations far more efficiently and then broadening their responsibilities to assist sales teams in helping clients understand investment strategies and product suggestions.



Jobs that can be fully automated by AI

Summary

Few of the tasks performed by this group require specialized skills or experience, making them extremely susceptible to generative AI automation.

Businesses may choose to phase out these jobs and automate them completely, or they may assess the high-value competencies of the people in these job roles—such as critical thinking, problem-solving and decision-making—to help them perform the job role in a new way or move to a new job role.

Highlights

Automation: Virtually all tasks automated

Types of workers:
- Data entry keyers (data entry clerk to data entry specialist)
- Statistical assistants (research assistant to statistical technician)
- Payroll and timekeeping clerks
- Customer service representatives

Job impact: Disruptive

Talent strategy: Reskilling for reassignment to a new role or retiring the job role

This cohort includes many traditionally "low-skilled" occupations whose job tasks—from compiling reports to processing paychecks—can be done more quickly, efficiently and accurately with generative AI. But while these job roles could be fully automated by generative AI, doing so could result in significant challenges for sustaining the talent pyramid since many of these roles have traditionally formed the talent pipeline businesses rely on for more mid-and senior-level roles.

Further, the critical thinking, decision-making and problem-solving skills required for many of these roles will always have value. So, while reducing headcount is one solution, reskilling employees for higher-value roles is a viable, often favorable, alternative.

Customer service agents are a good example of this opportunity. Over time, service reps develop deep institutional knowledge of the company's systems and processes, as well as the products and services they offer. This knowledge is highly valuable in positions like business analysts, solution designers or product architects.

Tailor your talent strategy for four workforce groups

As generative AI automates their routine interactions, service reps could focus on the more complex problem-solving aspects of the job, ultimately helping them do their job in a new way or transition to a new role more efficiently.

An example of reassigning customer service roles is IKEA, which has reskilled 8,500 call center representatives since 2021 to transition into roles as interior design advisors. So far, the company has no plans for workforce reductions even as its chatbot has handled 47% of the customer queries routed to call centers over the past two years.

Business leaders must develop a clear strategic position: Are the professionals in highly automatable job roles rediverted to other areas of the business, or are they simply let go? Differing corporate strategies will have different answers. But the reality is, businesses must prepare for a world in which large segments of their workforce can still deliver value but just very differently from how they do so today.

A talent management playbook

As business executives learn more about the impact of generative AI on their workforce, they can tailor talent management strategies to optimize the balance between human and automated work. In doing so, they need to keep sight of some of the more subtle—but consequential—changes that could happen when the workforce, and talent strategies, are not well-managed.

Here are some of the most important considerations for businesses as they embark on their generative AI-driven talent strategies:

1. Manage the health of your talent pyramid

Entry-level employees, responsible for executing lower-skilled tasks, form the bedrock of today's skill ecosystem. Now, however, these entry-level tasks are highly susceptible to automation by generative AI.

Without the steady progression of employees gaining skills over time and advancing through the ranks, the entire talent framework could fall apart. Because there would be fewer lower-skilled job tasks to be done by people at the base of the pyramid, businesses would be forced to increase their investment in any entry-level employees they hire, as these professionals would need more time to begin contributing effectively and require more training early in their career.

If this gap in entry-level job roles widens dramatically, it could potentially lead to the need for government intervention in the form of apprenticeship programs or other funding mechanisms. However, these measures take time to implement.

If it progresses more slowly, market dynamics could gradually correct this imbalance by making the hiring of experienced personnel expensive enough that businesses decide to reinvest in training for new hires.

Waiting for either outcome is a poor long-term strategy. Instead, businesses will need to begin investing in sustainable talent models in the short and long terms, at a level they're likely not accustomed to.

Rather than wholesale task automation, they'll need to assign entry-level workers a subset of low-value tasks to perform as they build their experience and expertise, while at the same time engaging them in comprehensive training programs to help them more quickly transition to more complex and less automatable job roles, for which they'd need to hone critical human skills involving judgment and interpersonal communications.

Assign entry-level workers a subset of low-value tasks, while also engaging them in training programs to help them more quickly move into more complex job roles.

2. Continue nurturing human experience and expertise

In many of the examples we've analyzed, there's a real prospect of experienced professionals doing fewer high-value work tasks themselves and, instead, becoming custodians of the work generative AI is doing, such as validating and verifying its output. However, this presents a significant long-term challenge of losing critical skill sets that, while automatable, offer important value.

Designers know if a design is good because they have experience in design. Similarly, programmers know what bad code looks like because they have many years of coding under their belt. When people lose the chance to develop this hands-on experience and nuanced understanding by performing the work tasks themselves, it threatens the depth and breadth of expertise within an organization. This erosion of skills can lead to a workforce that is less capable of innovating and problem-solving, as they become increasingly reliant on AI tools.

Organizational reliance on AI could also become difficult to reverse. If the AI systems fail or produce suboptimal results, the lack of experienced professionals who can address the issues could pose a significant risk to the organization.

Businesses need to strike a balance between leveraging AI for efficiency and maintaining the development of critical human skills by ensuring their workforce continues to develop and retain valuable expertise. This may involve creating opportunities for employees to engage in hands-on tasks, providing continuous learning and development programs, and fostering a culture that values both human and AI contributions.

Strike a balance between leveraging AI for efficiency and ensuring the workforce continues to develop and retain valuable expertise.

3. Prepare for C-suite change

Our report has predominantly focused on workers in the middle and lower levels of the corporate hierarchy, given their exposure to generative AI. However, the impact extends to the top tier as well.

While senior leader roles like the CEO are relatively insulated from automation due to the accountability level of these roles and their decision-making responsibilities, we anticipate that AI's encroachment into some C-suite activities will fundamentally transform the skills and experience required at this level.

AI systems can process vast amounts of data, identify trends and propose strategic decisions with unparalleled speed and accuracy, potentially surpassing human capabilities. As a result, the traditional skills and experience tied to executive decision-making may become less critical. This could lead to leaner C-suites, with organizations relying more on AI to support strategic decisions rather than on large teams of executives.

Some—including OpenAI CEO Sam Altman—even foresee the possibility for billion-dollar companies operating with a single employee, a CEO, at the helm while AI manages all the other business functions. Taking this more extreme example, it's easy to see how succession planning could become an issue: What happens to the company if its only employee is unwell or otherwise incapacitated?

At a less dramatic scale, a shrinking C-suite creates similar challenges. Businesses need a diverse pool of executive talent that can dynamically bring skills and experience into different areas of the business as needed. And while the prospect of automated executives may seem far-fetched, the proliferation of automated systems used in decision-making may reduce the exposure junior leaders have to the process—and diminish the flow of battle-hardened executive talent. Businesses should continue to engage middle-level executives to ensure they can tap the experience they'll one day need at the top.

Even with the possibility of fewer people in the C-suite, ensure a diverse pool of executive talent and succession plans for junior-level leaders.

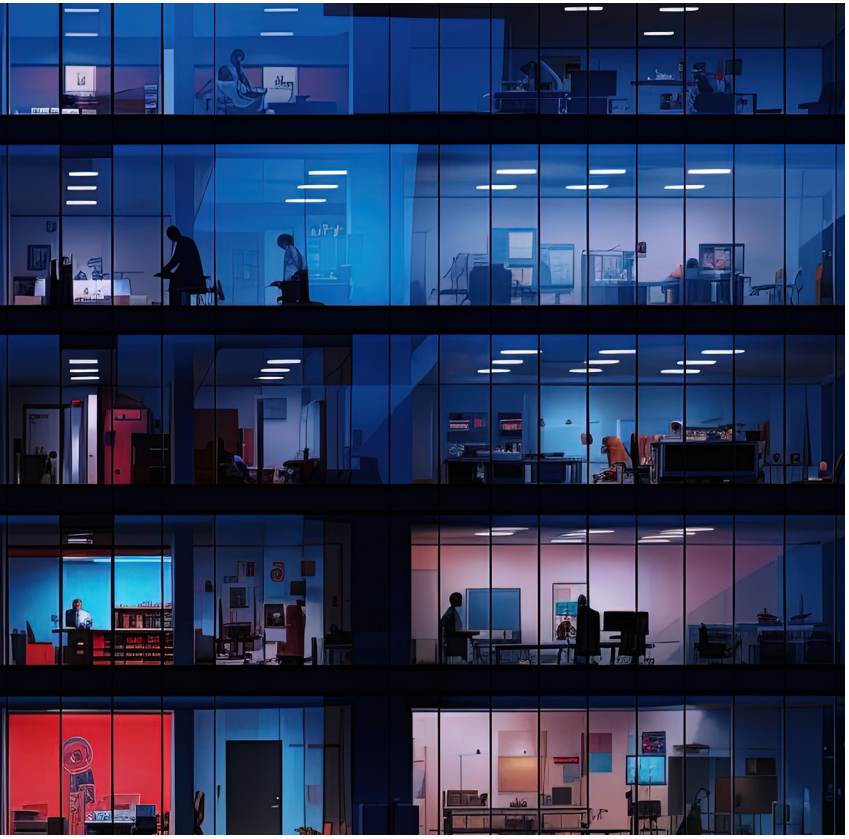
4. Skill for both the tangible and intangible results

To foster a culture where innovation can flourish, businesses should offer all employees an opportunity to experiment with generative AI without the pressure of immediate returns. One way to do this is to create a space where anyone can reserve time to explore AI tools, test ideas and develop hands-on skills in a low-pressure setting.

While such investments may not yield immediate ROI, they empower employees to learn by doing. Adopting a "fail-fast" mindset requires a shift in leadership focus—prioritizing long-term growth over short-term profitability. By creating an environment where experimentation is encouraged, companies can develop a more adaptable workforce ready to navigate future challenges.

Create a space where anyone can reserve time to explore AI tools, test ideas and develop hands-on skills in a low-pressure setting.

The shape of the workforce to come



Enhanced, augmented, transformed, fully automated. All four job groups exist in some form within any business's workforce.

The talent management decisions business leaders make now have never been more important for preparing these various job groups for working with generative AI. Not only will they impact the individuals within these roles, but they'll also have vast ramifications for their own talent models—and the shape of their workforce in the near and distant future.

Like all innovations, generative AI will both add and subtract. By carefully assessing the changes to jobs, tasks and skills with generative AI adoption, businesses can work out an equation that realizes the additions and multiplications possible with generative AI.

About the author

Ollie O'Donoghue

Senior Director, Cognizant Research

Ollie O'Donoghue leads Cognizant Research, leveraging over a decade of experience as an industry analyst and consultant. His primary focus is on understanding the impact of new economic and technological trends on businesses and industries.

Throughout his career, Ollie has provided valuable guidance to C-suite decisionmakers, helping them navigate the best paths for digital transformation initiatives, changing economic environments and emerging business models. He has also contributed to refining marketing messaging and developing go-to-market strategies for large IT services and software companies.

OliverRory.O'Donoghue@cognizant.com

Acknowledgments

The author would like to thank the following Cognizant associates for their contributions to this report:

Lynne LaCascia, Head of Brand and Creative Strategy, Content, Thought Leadership & Research

Catrinel Bartolomeu, Director of Storytelling and Content

Mary Brandel, Editor

Cognizant Research

At Cognizant Research, we help leaders make sense of today's volatile socio-economic climate. We bring quality research and insights rooted in Cognizant's deep industry and technology expertise, helping leaders make the decisions that fuel their companies' success.

Visit us at www.cognizant.com/us/en/insights.

Learn more about how we're working with generative AI and the people who use it to engineer modern businesses and improve everyday life.

About Cognizant

Cognizant (Nasdaq: CTSH) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life. See how at www.cognizant.com or @cognizant.

World Headquarters

300 Frank W. Burr Blvd.
Suite 36, 6th Floor
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Toll Free: +1 888 937 3277

European Headquarters

280 Bishopsgate
London
EC2M 4RB
England
Tel: +44 (01) 020 7297 7600

India Operations Headquarters

5/535, Okkiam Thoraipakkam,
Old Mahabalipuram Road,
Chennai 600 096
Tel: 1-800-208-6999
Fax: +91 (01) 44 4209 6060

APAC Headquarters

1 Fusionopolis Link, Level 5
NEXUS@One-North,
North Tower
Singapore 138542
Phone: +65 6812 4000

© Copyright 2024, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the express written permission of Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.

WF 3163653