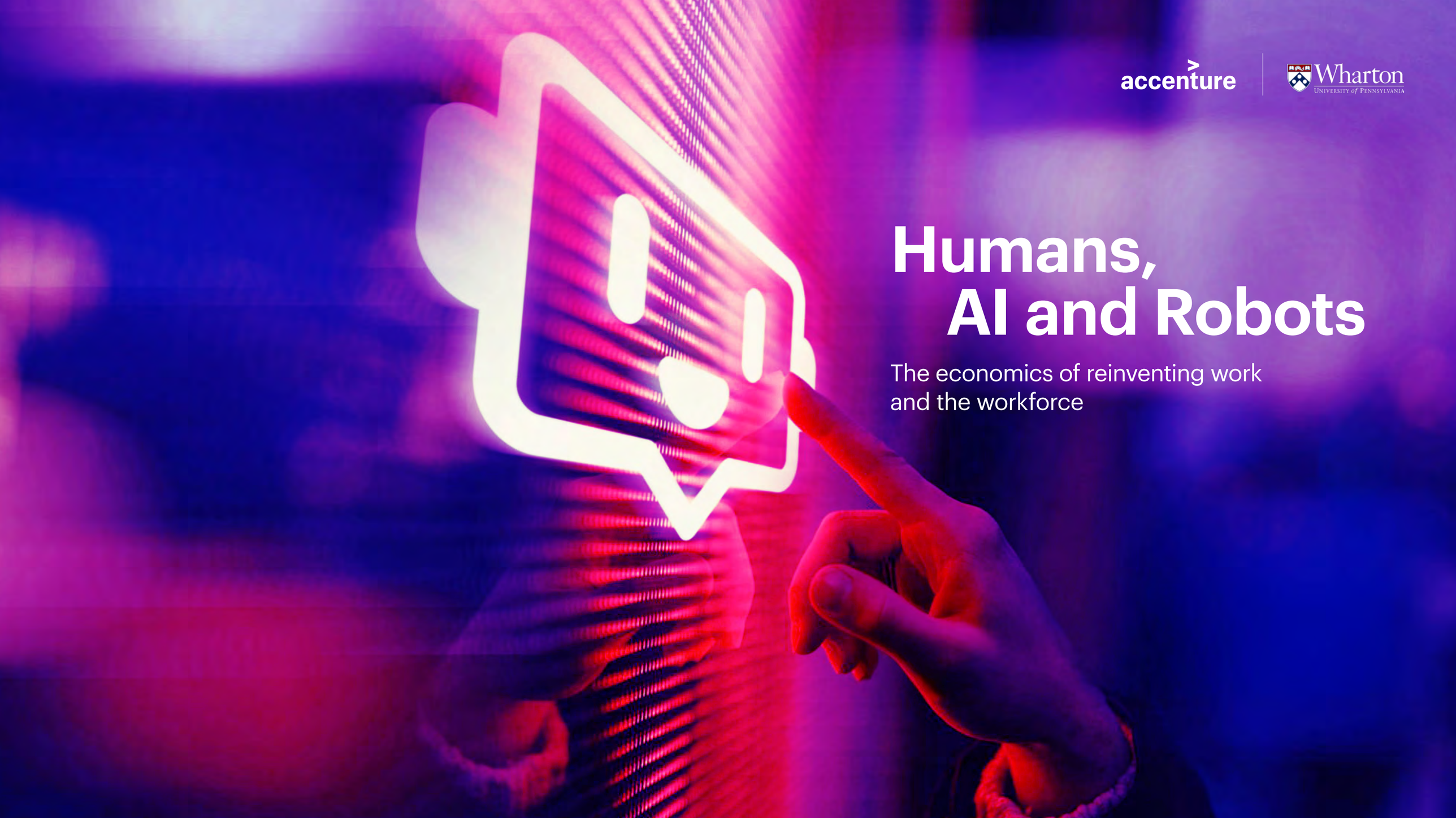

accenture | Wharton University of Pennsylvania

Humans, AI and Robots

The economics of reinventing work and the workforce

Executive summary

As AI technologies proliferate, industry leaders have a unique opportunity—not just to enhance efficiency but to unlock entirely new paradigms of **individual**, **economic**, **organizational** and **societal** value. The Wharton School of the University of Pennsylvania and Accenture are launching a global research initiative to help these leaders understand why and how to achieve that impact at scale.

Our focus: Understanding how a future shaped by the deep integration of human strengths with generative AI-powered agents and robots can fundamentally redefine work across industries.

How we define Human+ workforce: Seamless integration of onsite and remote employees with autonomous agents and intelligent robots, redefining productivity, collaboration, and decision-making.

Our goal: Provide a robust fact-base and a suite of action-oriented insights to help executives architect this transformation—not as passive participants but as designers of a new economic and organizational reality.

> Early hypotheses and insights from Wharton and Accenture's latest findings offer our starting point and a preliminary roadmap for executives and policymakers seeking to navigate the agentic age with responsibility and purpose.

Key findings

Individuals

Pair strengths purposefully: Combine human creativity, intuition, and adaptability with AI's precision and efficiency—but only where augmentation enhances outcomes. In tasks where AI outperforms humans, autonomous agents may be more effective.

Match tasks to strengths: AI excels in cognitive functions like classification, pattern recognition, and sensory tasks.[1] Organizations must align task assignments with human vs. machine strengths to maximize performance.

Boost performance and morale: A study with 700+ professionals showed that AI teammates not only enhanced productivity but also increased positive emotions and reduced stress, reshaping collaboration in knowledge work.[2]

Biopharma Case Study: An "agentic twin" analysis of biopharma roles and tasks revealed 50 AI agents (30 digital, 20 physical) and $180–240B in potential annual value in the U.S. through digital and physical agent integration—driven by productivity gains, automation, and faster time to market.[3]

Economics

Match workforce to financial goals: Digital and physical agents are reshaping workforce economics from individuals to entire value chains. Leaders must assess the financial impact of each workforce component (onsite/remote workers, agents, robots) on profitability, ROIC, and asset efficiency.

Shape evolving pricing models: New pricing frameworks (e.g., per-conversation, outcome-based, hybrid) are emerging to align AI investments with value creation. These models require careful calibration of cost vs. ROI

Activate value through targeted actions: Organizations can drive economic gains by enhancing individual roles, adding agents, changing team mixes, and restructuring end-to-end processes—each action offering distinct cost and value implications.

U.S. health insurer case study: The company tripled document processing volume and cut processing time by 90% through a hybrid approach—balancing cost and performance.[4]

Organizations

Build continuous change as a core capability: Reinvention must become an ongoing capability—reshaping roles, workflows, and decision-making as AI evolves.

Lead in new ways: Leaders at all levels—including those managing agentic teams—must foster trust, connection, and purpose to help people thrive through change

Access and scale talent differently: AI-powered global capability centers (GCCs) are unlocking new ways to scale expertise and services. Digital and physical agents are enhancing service delivery through automation, orchestration, and integrated help.

Build future-ready organizations: Companies need adaptive, real-time learning infrastructures—powered by GenAI—to reskill at scale and continuously rebalance human-agent collaboration.

Society

Recognize broad societal impact: The AI-driven workforce transformation will have broad effects on skills, education, labor markets, and human dignity—raising urgent questions around bias, equity, and socioeconomic gaps.

Align across key pillars: Coordinated action is needed across 1) corporate governance, 2) cross-border regulations, 3) education and training systems, and 4) ethical frameworks to guide responsible AI adoption at scale.

Act with urgency: Unlike past revolutions, the speed of change is a defining feature—requiring leaders to act swiftly and boldly to avoid falling behind or exacerbating societal risks.

Steer toward shared value: The future could bring displacement and hardship—or reskilling, empowerment, and more fulfilling work—depending on how business, government, and institutional leaders respond now.

Call to action

Success depends not on reacting to change, but on designing it—strategically, thoughtfully and with a relentless focus on shared value. Please reach out to the authors if you would like your organization to contribute to this important endeavor.

Foundational questions guiding our research:

- How does the **Human+** workforce (e.g., onsite and remote talent, robotics, autonomous agents) impact cost per unit and value at different levels of adoption (individual, operational team, function/sub-function, end-to-end value stream)?
- What actions (enhance, add, change mix, restructure) at which organizational level drive inflection points in cost per unit and value? How do cost reductions and value gains impact a company's key financial metrics such as gross margin, return on assets (ROA) and return on invested capital (ROIC)?
- How can companies determine which set of actions are right for their organization and the optimal pace of investment?

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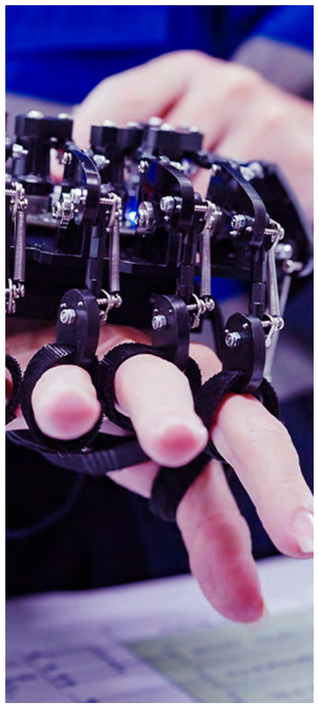


Introduction

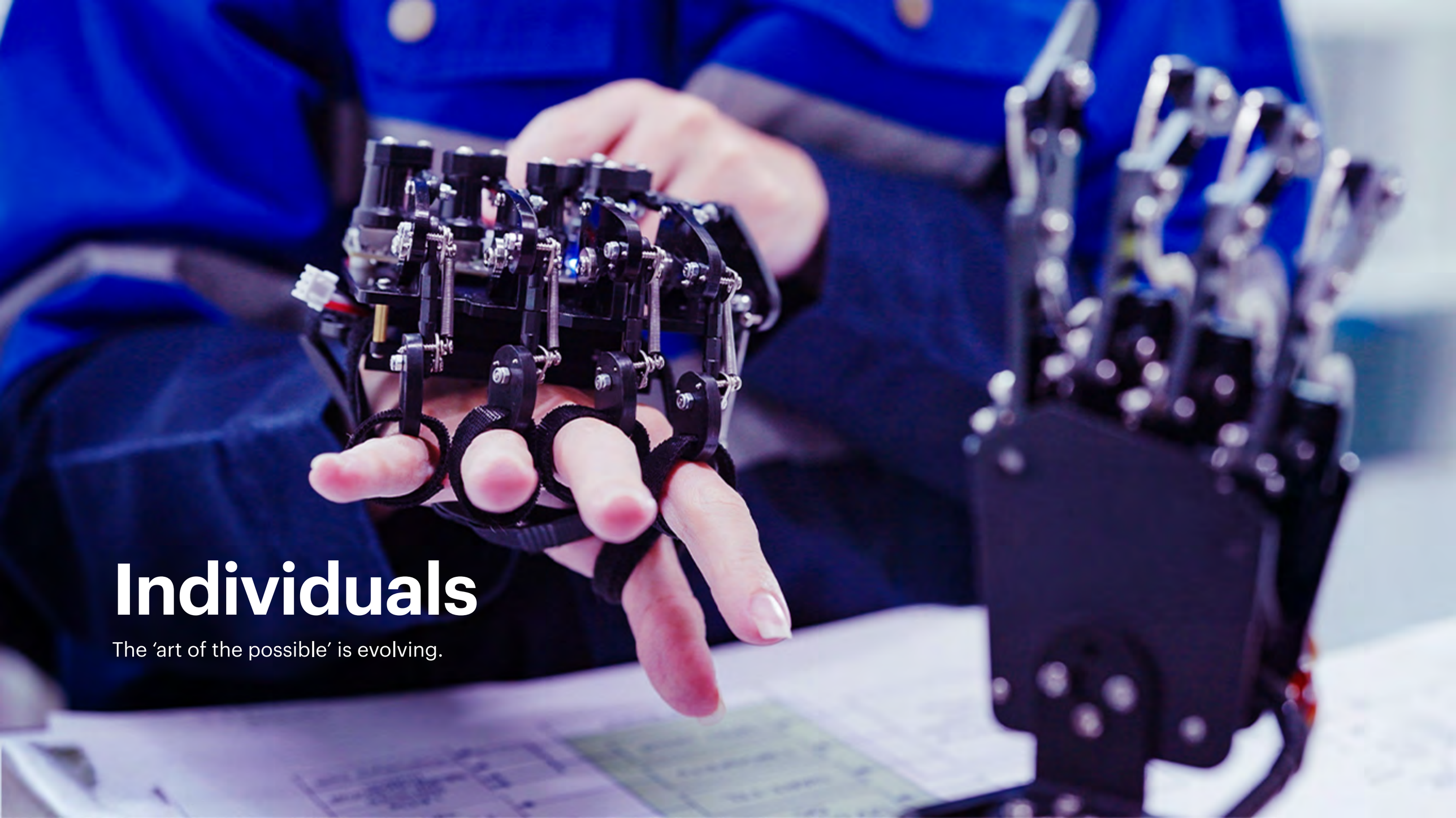
Redefining the nature of work as the fully collaborative Human+ workforce comes into focus

As AI and advanced robotics proliferate, the modern workforce is undergoing a significant transformation. No longer will it be fully human, or even humans directing machines. Instead, it will be **Human+**. This new workforce will seamlessly integrate on-site and remote employees with autonomous agents and intelligent robots, redefining productivity, collaboration, decision-making and organizational structure. Organizations must now rethink how they structure work, manage talent and drive economic advantage.

Managing the economics of this transformation is already becoming the new performance frontier. Ensuring worker welfare with an eye to bettering society will be the key to achieving sustainability, innovation and resilience. It will take tremendous leadership, perseverance and steadfastness to ensure responsible change—and foresight to develop practices that can evolve as needs arise without threatening the progress that has been made.

What will it take to succeed in this new environment? This report, part of an 18-month research project between Accenture and the Wharton School at the University of Pennsylvania, explores that question through four lenses: **Individual** (the potential of integrating people with AI technologies at scale), **Economic** (the financial rewards and new dynamics of economic advantage), **Organizational** (the path to realizing potential gains at scale) and **Societal** (the critical ripple effects of today's decisions and the need for intentional action). The report offers overarching questions aligned to each lens, along with early hypotheses, supported by recent research findings.

Ultimately, our goal is to provide business leaders and other stakeholders with a robust fact-base and actionable insights to inform their strategic decisions. Here, we offer a preliminary roadmap for business leaders and policymakers seeking to navigate the agentic age successfully with responsibility and purpose.



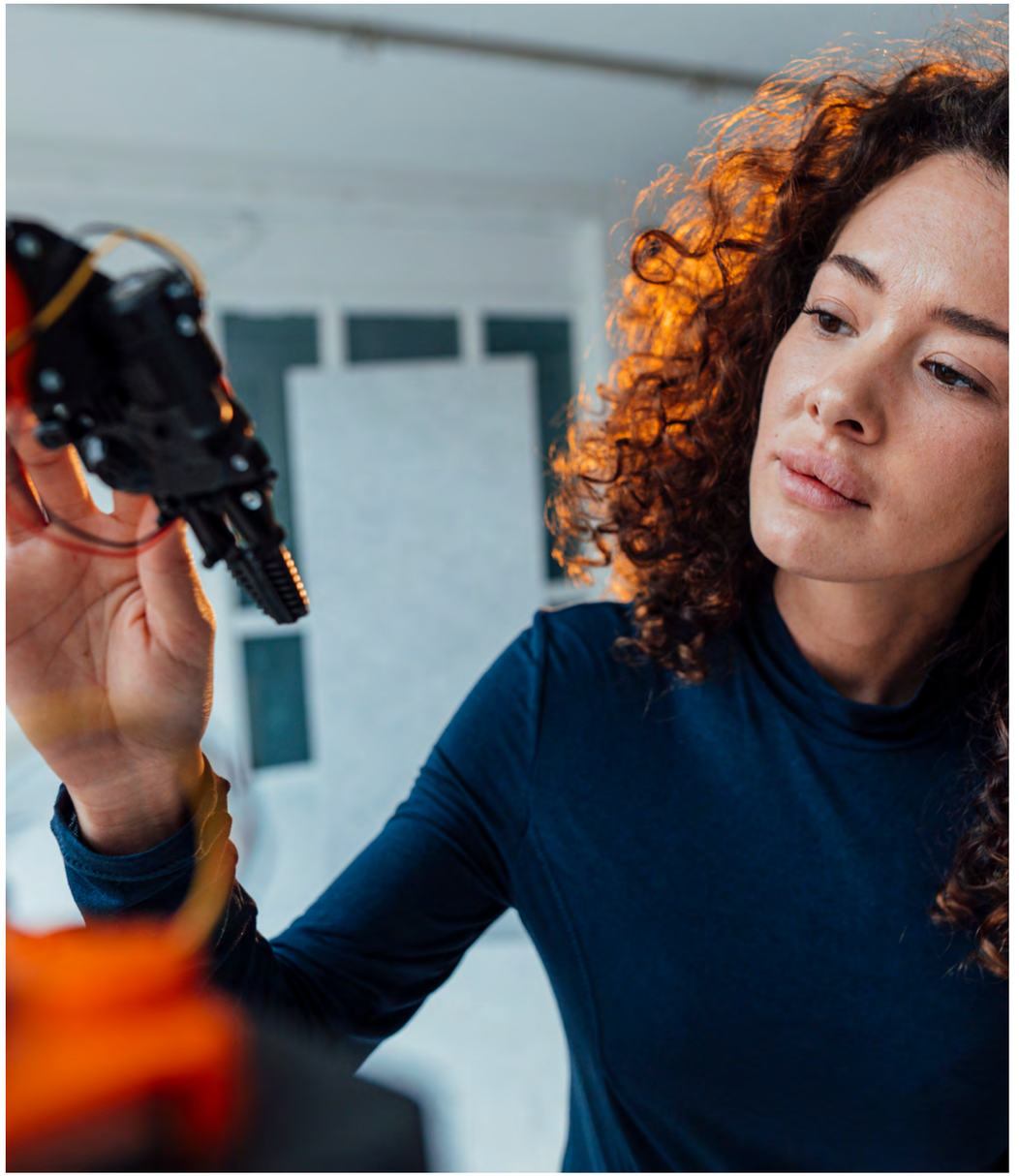
Individuals

The ‘art of the possible’ is evolving.

What does it mean to amplify intelligence and capacity through a workforce that combines human insight with AI precision and robotic efficiency? At its core, it means leveraging their complementary strengths: human creativity, intuition and adaptability paired with AI's capacity for data analysis, pattern recognition and efficiency. In healthcare,[5] for example, AI has become an indispensable partner to medical professionals, enabling more accurate diagnoses through enhanced analysis of medical images and patient data.[6] In creative industries, artists and designers are increasingly using AI tools to explore innovative techniques and redefine the boundaries of their work.

Meanwhile, AI-powered robots have proven their value in improving efficiency, reducing production variance and enhancing quality in operations. Longitudinal data from Statistics Canada has demonstrated how robotics minimize managerial oversight while ensuring consistency, enabling businesses to adopt new performance metrics and incentive-based models. Such examples underscore the profound potential of pairing human creativity and machine learning, even in skill-based, dynamic environments.[7]

However, a comprehensive meta-analysis[8] based on 106 experiments confirms that blending human and machine effort isn't always the right approach. In cases where humans alone outperformed AI alone, researchers found that augmenting human work with AI assistance resulted in performance gains. But when AI alone outperformed humans alone, researchers found that combining human-machine efforts resulted in losses. In those case, it makes more sense to use autonomous AI agents, albeit with constant monitoring to prevent or address unintended consequences.



The key is understanding which tasks are best suited for each approach. Research indicates that cognitive abilities—particularly classification, categorization and pattern recognition—are the primary drivers of AI's effectiveness.[9] Roles requiring sensory abilities, such as visual and auditory perception, are also prime opportunities for AI enhancement. By aligning tasks to the strengths of AI and humans, organizations can maximize the combined potential of human ingenuity and machine capability.

Case study in consumer goods

AI teammates enhance individual performance while fostering positive emotions:

A field experiment in consumer goods with 700+ professionals found that AI can enhance individual performance and reduce functional silos. In addition, people using AI reported significantly higher levels of positive emotions (excitement, energy, and enthusiasm) and lower levels of negative emotions (anxiety and frustration) compared to those without AI. These findings indicate that integrating agentic coworkers into teams not only boosts productivity but also reshapes how expertise and collaboration unfold in knowledge work.

Case study in life sciences

The biopharma industry offers an example. To anticipate how biopharma companies will integrate AI technologies including digital agents and robots (physical agents), Accenture Research analyzed nearly 300 tasks and 90 roles across the industry, using occupation-level data from O*NET and the United States Bureau of Labor Statistics (BLS).

This bottom-up analysis included matching each of the 300 tasks to various digital and physical agents as applicable and assigning automation potential to each. By aggregating the impact of these agents at the function level, the research team gained a comprehensive view of what percent of time spent on various tasks and functions will benefit from agents. In addition, research demonstrates how physical and digital AI agents will reshape the workforce dynamics in biopharma—essentially creating a picture of an "agentic twin" of a biopharma company.

Initial analysis shows that these digital and physical agents create an annual opportunity of $180-240B in the US, for the biopharma industry. This includes **1) cost reductions based on automation, improvements in COGS and R&D productivity, and 2) revenue uplift based on accelerated time to market and peak sales.**

Key findings

Using a total of 50 agents

30 digital agents | 20 physical agents

Out of the 30 digital agents, approximately

- 10% are orchestrator agents
- 50% are super agents
- 40% are utility agents

Top digital AI agents: Assistant Agent, Analytics Agent, and Knowledge Base Agent

Top physical AI agents: Robotic Equipment Handling Systems, Vision Inspection Systems, and Automated Sample Preparation

Functions that will most benefit from agents:

- Enabling functions (including Finance, HR, and sourcing & procurement)
- Insights & analytics
- Marketing

Source: Accenture Research. 2025. See About the Research section for more information.

How digital and physical digital and physical agents influence workforce hours in biopharma enterprises

Approximately 55% of total workforce hours are impacted by digital and physical agents across a biopharma enterprise

Non-exhaustive

Digital Agents

Orchestrator ~1%

Agent name	% hours impacted
Strategic advisor	0.91%
Smart query agent	0.29%
Learning guide	0.21%

Super agents ~13%

Agent name	% hours impacted
Production companion	2.30%
HR companion	2.01%
Project companion	2.00%
Finance companion	1.45%
R&D companion	1.28%
Infrastructure companion	0.93%
IT companion	0.76%
Compliance companion	0.40%
Quality companion	0.32%
Critical thinker	0.31%
Medical companion	0.29%
Marketing companion	0.27%
Patient companion	0.21%
Sales companion	0.21%
Legal companion	0.19%

Utility agents ~24%

Agent name	% hours impacted
Assistant	6.96%
Analytics	2.70%
Knowledge Base	2.55%
Research	2.17%
Quality Control	1.77%
MDM	1.57%
Author	1.47%
Capacity & Skill	1.06%
Advisor	0.87%
Tech Support	0.84%
Designer	0.80%
Learning and Development	0.66%
Reporting	0.45%
EHS	0.27%
Crystal Ball	0.01%

Physical Agents

Robotic automation ~15%

Agent name	% hours impacted
Robotic equipment handling system	3.73%
Vision inspection systems	2.59%
Automated sample preparation	1.18%
Automated picking and sorting	0.94%
High-throughput screening	0.82%
Disinfecting and sanitization	0.81%
Palletizing and depalletizing	0.62%
Robotic palletizing	0.55%
Serialization robots	0.52%
Weighing and sorting	0.47%
Carton filling and sealing	0.44%
Scrubbing, vacuuming	0.42%
Robotic storage and retrieval	0.38%

Source: Accenture Research. 2025.
See About the Research section for more information.

Economics

The new, blended workforce will unlock transformative growth and profitability that translate into significant shareholder rewards—for companies that can calibrate the economic impact of each component accurately.

The economics of work and workforce will shift in concert with the proliferation of gen-AI-powered digital and robotic agents. To manage these dynamics well, leaders must first understand the economic impact of each workforce component—on individuals, operational teams, functions and sub-functions, and across the company's entire value chain. Then, they need to anticipate and optimize the overall effect on the company's financial statements, including profitability, asset efficiency and return on invested capital (ROIC). It's an incredibly complex prospect.

Consider: From traditional on-site human labor to remote arrangements (including outsourcing, offshoring and work-from-home), physical and digital AI can increase individual productivity. Augmenting workers' abilities can enhance their output, while introducing autonomous agents and robotics can transform their roles, as discussed earlier. The former simply improves an individual's productivity. The latter compels an individual to become a team leader, managing autonomous agents and robots by setting their goals and ensuring they are successfully completing tasks previously performed by humans.

Initially, both actions are likely to increase costs. However, they can also increase an individual's overall productivity, creating opportunities to increase individual work capacity.

> At the operational team level (the base of the management pyramid), AI-driven automation enhances productivity through two key levers: integrating autonomous agents and optimizing the resource mix.

Integrating physical or digital AI expands capacity by automating repetitive or structured tasks. For example, an orchestrator agent can manage workflows, dynamically assigning tasks based on skill, availability and priority. It automates routine activities while escalating complex issues to human workers, ensuring efficient collaboration across onsite employees, digital agents, outsourced teams and robots. Adjusting the balance of onsite, remote, digital and physical workers redefines team structures.

By shifting tasks traditionally handled by onsite employees to remote workers and AI-driven solutions, companies can reduce costs while maintaining or improving efficiency.

Such automation can address long-standing systemic capacity constraints, enabling organizations to meet both current and future demands more effectively. The combined impacts of these advancements at the individual and team level should compel executives to redefine traditional organizational structures at the sub-function and function level.

This transformation increases the overall capacity of each area, creating opportunities to reallocate resources to additional tasks and drive greater output.

Reimagining work through the lens of gen AI and agentic technologies, by necessity, leads to continuously evolving structural changes across the value chain, as leaders keep calibrating the mix to achieve an interconnected workflow that maximizes efficiency. An organization could even develop a “flex capacity” model, where a new function manages demand forecasting and is prepared to scale up agents and temporary workers rapidly to address sudden increases in demand.

At this point, leaders’ ability to calibrate value versus cost will be a critical differentiator, pushing some companies far ahead of others in terms of performance and profit.

A forest-level look at a situation that requires tree-by-tree management

Each element of the future workforce will impact a company's financial statements differently. On one hand, robotics can reduce direct labor costs and improve operational efficiency, contributing to higher gross margins and higher asset utilization, thus enhancing return on assets (ROA).

On the other hand, incorporating AI-driven agents may require capital investments for the initial build and then shift expenditures to operational expenses to run them. This would require close management of margins but would also provide agility during workload spikes.

Similarly, leveraging remote talent from cost-effective regions can reduce labor expenses while improving scalability.

The complexity of managing workforce economics in this new era cannot be underestimated.

Variations matter. The following table offers a snapshot of current agentic pricing models.

Pricing Model Name	Definition	Advantages	Disadvantages	Example/ Case Study
Per-Conversation Pricing	Charges a fixed rate per customer interaction or conversation, regardless of the outcome.	Predictable costs, scalable with usage, transparent pricing.	Does not differentiate between valuable and trivial interactions.	Salesforce Agentforce ($2 per conversation).
Outcome-Based Pricing	Businesses pay only for successful outcomes achieved by the AI agent, such as resolved customer inquiries or completed transactions.	Directly ties costs to value delivered, strong alignment with customer success.	Potential disputes over what qualifies as a 'successful' outcome; cost unpredictability.	Zendesk (charges only for successfully resolved issues). Chargeflow claiming 25% of the chargebacks.
Subscription-Based Pricing	Charges a fixed monthly or annual fee based on tiers that offer different levels of service, features, or usage limits.	Predictable costs, easy to budget, aligns with traditional SaaS models.	May not reflect true AI agent value: could be inefficient for businesses with fluctuating needs.	OpenAI Operator, DeepResearch
Hybrid Pricing	Combines elements of different pricing models, such as a base fee for conversations plus additional fees for successful outcomes.	Balances predictable revenue with incentive-based pricing; aligns costs with both usage and results.	More complex than single-model pricing; requires clear success metrics.	N/A
Labor-Replacement Pricing	Pricing is based on the estimated labor costs replaced or augmented by AI agents, typically with a discount compared to human costs.	Clearly ties AI pricing to tangible business value; simplifies ROI calculation.	Requires detailed cost analysis; may be difficult to standardize across industries.	N/A

For an illustration of this concept, see Figure 1.
The vertical axis shows the kinds of actions a company can take (using a sales force as an example). The horizontal axis shows the organizational unit involved. On the vertical, companies can:

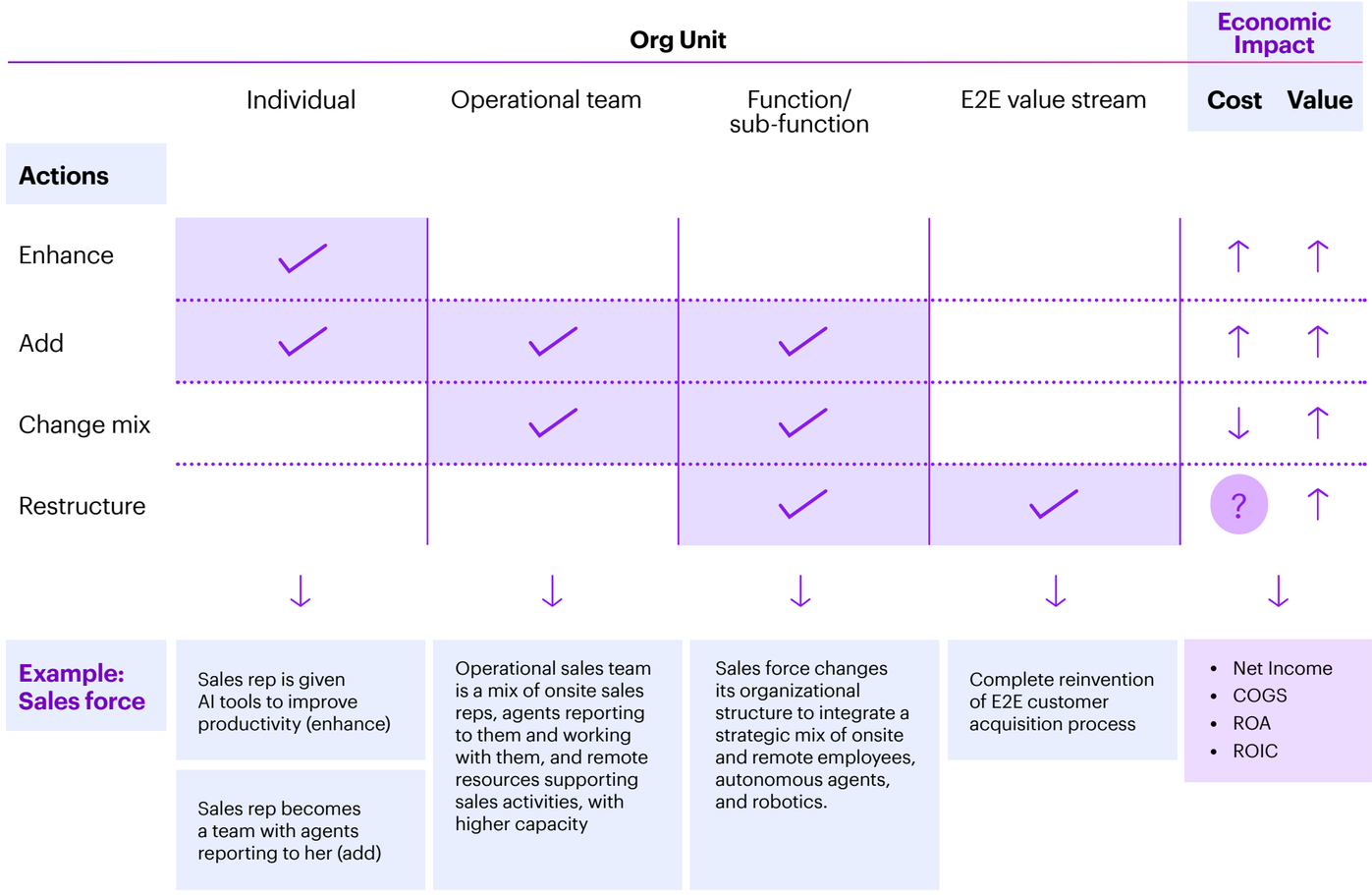
Enhance
The work of an individual with tech & AI

Add
Gen AI-powered agents and robotics to teams

Change the mix
Redefine the pyramid via remote workers, robotics and agentic teams

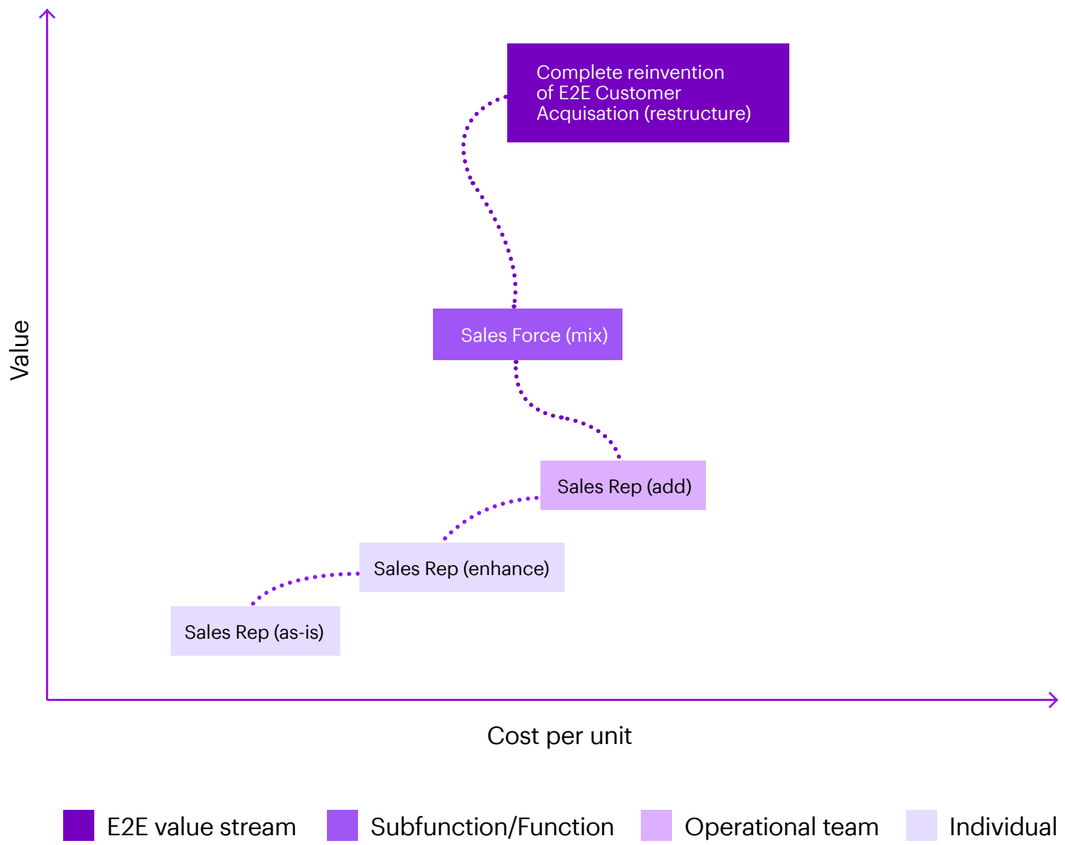
Restructure
Rethink and reorder end-to-end processes

Figure 1



Putting it all together, Figure 2 illustrates the progression of cost and value.

Figure 2



First, a sales rep's individual capabilities are augmented by tools such as copilot and AI-analytics. These tools provide real-time insights into customer behavior and preferences, allowing sales reps to write meeting summaries more efficiently. While these tools increase the productivity of the sales rep, they also increase cost. When the company adds autonomous digital agents, such as AI-powered chatbots and virtual assistants that handle tasks like lead qualification, appointment scheduling and responding to FAQs, CRM updates and sales performance analysis and reports, the sales reps essentially become sales team leaders and their output increases as they gain time to spend on strategic, revenue-generating activities. While these tools further increase productivity, they also increase cost.

Enter orchestrator agents, which serve as the central AI-powered coordinators, optimizing workflows by managing interactions between human sales reps, digital agents, outsourced teams and physical robots. The mix of sales force changes substantively at the team or function level, and the span of worker control. Orchestrator agents could route high-value leads to senior sales reps, delegate routine follow-ups to chatbots and trigger robotic inventory restocking when sales demand spikes. Remote sales reps focus on high-value consultative selling while onsite teams handle complex negotiations or relationship-driven sales. Robotics could streamline physical operations in retail and logistics, automating order processing, restocking and even customer service at kiosks. They could also analyze real-time performance data and adjust workforce distribution to optimize productivity and cost efficiency. An organization could even develop a "flex capacity" model, where a new function manages demand forecasting and is prepared to rapidly scale up agents and temporary workers to address sudden increased demand. Costs go down as output stays level or increases.

Finally, as companies approach full economic impact, processes are redefined end-to-end across full value streams, reaching well beyond the sales force. For example, autonomous agents can analyze real-time customer interactions, extracting insights that guide marketing teams in developing relevant content, optimizing channel strategies and refining promotional efforts. These agents also can provide dynamic pricing recommendations based on demand signals and sentiment analysis, ensuring competitive and customer-centric pricing. Conversely, insights from marketing campaigns—such as engagement trends and customer preferences—can be continuously shared with sales teams, enabling them to personalize outreach and improve conversion rates. At this point, leaders' ability to calibrate value versus cost will push some companies far ahead of others in terms of performance and profit.

The advancing power of physical AI-powered agents in warehousing and manufacturing

Accenture's partnership with Germany-based KION and Nvidia offers an example of the advancing power of physical agents. This trillion-dollar market touches every sector that handles physical goods. Workers and managers must consider an endless array of constantly shifting variables, from consumer demand to inventory on hand, to weather conditions, and accurately predicting operational performance for warehouses and distribution centers, to date, has been almost impossible.

But KION and Accenture are now working with Nvidia to power a secure digital twin that captures physical information from Nvidia's warehouses. The AI technologies powering the effort will enable Nvidia to run rapid and infinite scenario simulations of robot fleets and warehouse assets under different conditions, helping managers plan and optimize physical execution in a digital environments before they make decisions in the physical world, opening opportunities to reduce operating costs significantly while addressing labor shortages in warehousing and manufacturing.

While digital twins have been used for years, they've never before had this much horsepower supporting them. As Jensen Huang (Nvidia CEO) has said, "Every industry that becomes digitalized moves faster, [and] everything you can software-define becomes more capable . . . When you're digitalized, you can build consistently with greater capability, but when you become software-defined on top you get to revolutionize your business." This technology in combination with physical AI and application to robotic systems (from robot to control software and digital twin) allows scaled, real-time simulation and optimization at a narrowed simulation to real-world gap disrupting business processes to apply robotics solutions in any format.[10]

Where the possible meets the practical

While the art of the possible is exciting, real-world business constraints often dictate the art of practical, shaping today's optimal solutions. These include financial constraints, solution economics, data availability and the maturity of AI applications.

Take the experience of one US healthcare insurance company that revolutionized its document processing workflows, achieving a threefold productivity boost. Its initial challenge? Extracting and differentiating data from a vast array of unstructured documents. Traditional machine learning models could classify documents but struggled with nuanced data extraction.

Enter Generative AI (Gen AI). Large Language Models (LLMs) can understand context and extract information with high accuracy. The development team initially selected one of the most sophisticated LLM-based tools for extraction and classification. However, its high cost made full-scale deployment impractical.

To strike a balance between cost and performance, team members designed a three-step hybrid approach

- Optical Character Recognition (OCR) for First Pass: A simple OCR tool handled initial classification and extraction.
- Tiered AI Processing: An open-source GenAI model processed misclassified documents, while a premium AI tool handled the most complex exceptions.
- Human Review for Edge Cases: Only 2.7% of documents required manual intervention—down from nearly 90% previously.

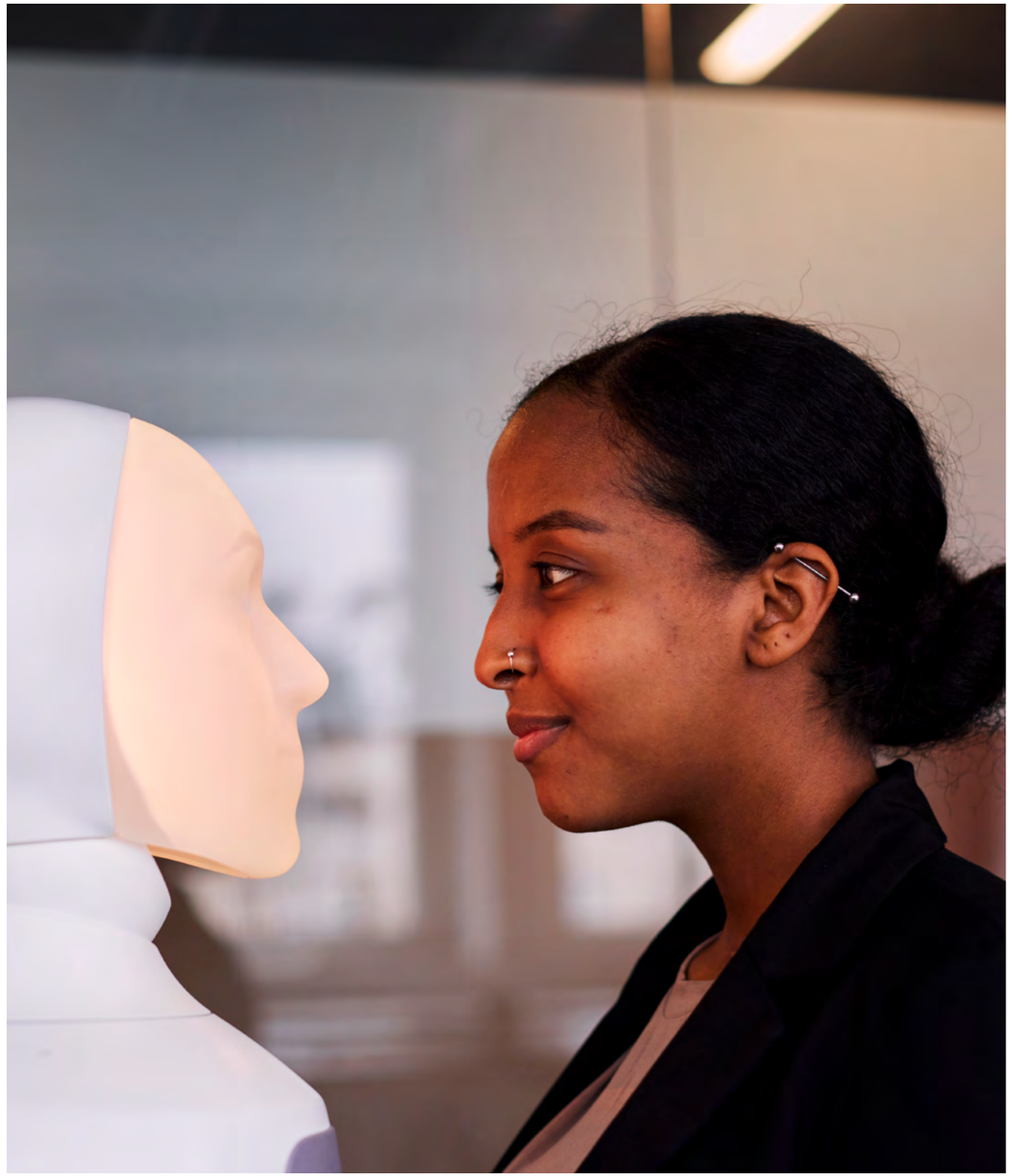
The results were transformative

- Processing time per document reduced by 90%
- Daily document volume tripled from 10,000 to 30,000
- Enhanced employee satisfaction by shifting focus to complex cases

This structured, cost-conscious approach exemplifies how businesses can balance cutting-edge AI capabilities with practical, scalable implementation—optimizing workflows while ensuring financial sustainability and employee engagement.[11]

Organizations

The key is maximizing the interplay between human ingenuity, AI and robotics capabilities across the enterprise, by prioritizing human well-being.



Technology limitations and legacy challenges can hinder scaling. However, the greatest barrier is often that organizational systems and ways of working have not been adapted to support gen AI (and robotics) at scale. Leaders at all levels—including individual contributors stepping into new roles as team leads of agents and robots—must navigate this shift and lead in new ways to address this barrier proactively. The stakes are too high—the transformative potential of these technologies too great and the rate of change too rapid—to do otherwise.

This means becoming the overall architects of **continuous change**—the salient word being continuous. The overarching goal is to raise organizational intelligence, using AI to enable enhanced collaboration between humans and machines. In practice, it calls for developing entirely new ways to work. Jobs will be reshaped and reshaped again. Workflows will shift and shift again. Leaders need to embrace the mindset that revisiting and revising organizational decisions, made with great thought and care, is now a necessary constant.

The key to getting it right through each shift? Keeping people front and center.

Constantly focusing on enabling people to do the work they love in a way that supports innovation and growth. Meeting fundamental and enduring worker needs[12] above all else, including the need for purposeful work, the need to be employable and the need for a sense of belonging—being an integral part of something bigger than oneself. Only in that way will they be able to compel people throughout the organization—as well as those entering the workforce—to embrace the idea of thriving in a rapidly changing environment. They will need to build and communicate tangible connections between purpose and activation to inspire a shared understanding of "why" as work evolves.

Above all else, this mean building trust. Executives can do this in part by modeling balanced and responsible AI use and prioritizing in-person connections with people around the organization, to give people a tangible way to ground themselves. A significant majority of executives (77%) who participated in a recent Accenture global survey[13] believe unlocking the true benefits of AI will only be possible when it's built on a foundation of trust. We expect that number to rise.

Leaders also need to create the right conditions for others to implement strategic changes. Companies can draw on lessons from behavioral science to support employees as they adjust to the new pace of learning and change. For example, if employees appear resistant to the new approaches, companies can conduct anonymous surveys to uncover the underlying reasons for their hesitance. Executives can then tailor 'nudges' to help employees adapt. This might involve providing private space and time for individuals to test out new technologies, with help standing by to answer questions. The idea is to meet people where they are and convey the message that being on a learning curve is the new and constant, welcomed state.[14]

Business leaders will also need to access and create talent in new ways. On the "access" front, it's worth studying how the integration of autonomous agents is reshaping traditional offshoring models by automating routine, labor-intensive tasks and shifting the focus from cost arbitrage to expertise-driven offshoring. Functions such as customer service, back-office processing, and IT support—once heavily offshored—are increasingly handled by AI-powered virtual agents, robotic process automation (RPA), and machine learning models, reducing the need for large offshore teams. As a result, companies are moving beyond low-cost labor markets and instead offshoring high-value, AI-augmented work to talent hubs with specialized expertise. This includes AI model supervision, human-in-the-loop operations for regulatory compliance and exception handling, and domain-specific AI applications such as intelligent drug discovery in biopharma. Rather than merely shifting jobs offshore for cost savings, organizations are now leveraging global talent for AI-driven innovation, ensuring that human expertise complements autonomous systems in a more strategic and value-driven manner.

On the creation front, the evolving environment will call for predictive workforce planning, and a recruiting approach that favors curiosity and a willingness to learn over fixed skillsets. People throughout the organization will need to learn new skills, teach AI agents new skills, involve themselves in the design of new uses for technology and perpetuate that cycle. The more they learn, and the more they teach, the more they will be able to shape their jobs to hit higher bars for excellence in performance. Training will need to give back in real time.

> The idea is to meet people where they are and convey the message that being on a learning curve is the new and constant, welcomed state.

Shifting workforce structures demand new organizational strategies: Robot adoption

Longitudinal data from Statistics Canada demonstrates that robot adoption is reshaping workforce composition, decreasing demand for middle-skilled workers while increasing demand for low- and high-skilled roles. This shift requires organizations to reconfigure their structures to support this evolving skills mix.

Furthermore, robotics adoption, motivated by quality improvement rather than cost reduction, reduces variance in production processes, minimizing managerial oversight while boosting product and service standards.[15]

The new environment will also call for personalized training tracks, delivered in real time as needs arise and in response to employee sentiment, rather than periodically pushed to wide groups of employees. Unironically, gen AI-powered agents will be able to help develop and deliver these trainings.

Ultimately, companies will need to create a dynamic job and skills infrastructure suited to a workplace where people and technologies will be learning and advancing together, all the time. For the first time in history, we have a technology that learns and evolves with new information. To thrive over time in a hybrid workforce, organizations will therefore need to become future ready. As a matter of course, they will need to test, learn, and support or pull back on myriad combinations of people and agents, concurrently and continually. AI use will require ongoing evaluation to ensure it complements human efforts and enhances organizational outcomes. Leaders must monitor for over- or under-reliance on AI collaborators, balancing trust and performance across workflows and processes.

IBM provides one view into this concept, as many organizations have already used the company's watsonx Orchestrate[16] AI-powered solution in concert with the company's business automation workflow (BAW) platform to help people coordinate hybrid work. Some have streamlined tasks such as emailing coworkers and collating spreadsheets.

Society

This transformation of work can benefit society at large in significant ways if business, government and institutional leaders collaborate with intent to make it happen.

As with the industrial revolution and other major technological shifts, this emerging transformation will have broad impacts on society. Questions are already arising around anticipated imbalances in skills and labor, the need for educational system and corporate training mandates, geographic and geopolitical impacts, human dignity and autonomy, socio-economic gaps, discrimination and bias. These issues distill into the need for alignment across four areas: **corporate governance policies and standards** (within and across industries); **governmental regulations** (cross-industry and cross-border); **the processes and practices needed to adapt the human workforce to a new approach to work** (across educational systems and enterprise training); **and the responsible and ethical rules and guiderails** (that will direct the use of these technologies at scale).

The questions—and the areas needing alignment—are not surprising. But this transformation has a critical variable that separates it from any other: its speed, which can put extra pressure on executives worried about risk.

Executives need to gain the confidence to use AI boldly, driving innovation, profit and new levels of employee fulfillment, with ripple effects that elevate society. Hanging in the balance: the fates of the people in support and care service roles. Will many of them be out of a job in the near future, potentially wreaking havoc on family finances, healthcare and wellbeing? Or will they become the vanguard of a newly reskilled talent pool, filling the roles where demand is on the rise?

The ability forge a future where jobs are created, not lost, and work and life become more fulfilling for more people depends on the concerted efforts of business, government, and institutional leaders to get out ahead of this transformation as fast as possible. Likely with the help of AI.

Conclusion:

The C-suite's outsized opportunity

It's clear that the section of this paper on societal implications is essentially a call to action. So we'll close with this thought, even as we ramp up our research. C-suite executives today have a pivotal opportunity to pioneer strategies that redefine the art of the possible for their business. The challenge isn't just about adopting new technologies; it's about actively shaping the future of work by experimenting, iterating and staying ahead of the curve.

The path forward requires bold leadership, a mindset of discovery and continuous change, and the ability to fundamentally redefine work and reshape the workforce. With a structured and data-driven approach to developing human+ workforce strategies, leaders can unlock new opportunities, refine what works and ensure that both their people and their organizations thrive in this new era. The shift isn't just technological—it's cultural. Success will come to those who navigate this transformation with purpose, empathy and a relentless focus on creating value that extends beyond the bottom line to amplify human performance.

This is more than an inflection point—it's an invitation to lead, responsibly and ambitiously. Experiment. Refine. Innovate. Lean into the work of reinventing work.

Watch this space.

About the research

Agentic twin analysis

This study utilizes a structured approach to assess the impact of digital and physical AI agents on tasks within the biopharma industry. We began by leveraging data from O*NET and the Bureau of Labor Statistics (BLS), mapping approximately 300 tasks across 90 roles aligned to the pharmaceutical sector. Initial agent definitions were sourced from Accenture projects. Each task was mapped to digital or physical AI agents, and new agents were identified where applicable. The impactable task hours estimated by subject matter experts based on client experience. The allocation of hours to virtual and robotic agents depended on task-specific tagging, with a structured approach to dividing hours when both agent types were involved. Since tasks are associated with multiple roles, the impacted hours were distributed across functions based on a weighted average.

Opportunity sizing

Company revenue, R&D, and COGS forecasts were sourced from Evaluate Pharma. Additionally, labor cost calculations were based on data from the U.S. Census and Lightcast. Using these data sources, the following assumptions were made to estimate the uplift and savings across the value chain from implementing digital and physical AI agents:

Revenue uplift was calculated by accelerating the time to peak sales on a ramp-up schedule from 2026 to 2030. Specifically, for each drug-indication pair launched in 2026, time to peak sales was accelerated by one year; for 2027 launches, by two years; and so forth, up to four years for 2030 launches. We then summed the ramp up schedule to arrive at our uplift in 2030. The median peak sales per indication of $1.1 billion was derived from Evaluate Pharma data. This calculation does not account for qualitative factors such as first-mover advantage.

COGS and R&D were assumed to be reduced by 8-10% and 20-25% in 2030, respectively.

Labor costs were estimated by identifying the number of roles in each functional area using U.S. Census data. Salary ranges were derived from Lightcast data for the top 20 pharmaceutical companies. Multiplying these two metrics provided a range of total labor costs per functional area. Next, we calculated the percentage of tasks within each role that are automatable by AI Agents. These projected savings were then applied to the previously identified labor cost range to determine total labor savings.

References

1. https://onlinelibrary.wiley.com/doi/full/10.1002/smj.3286
2. papers.ssrn.com/sol3/papers.cfm?abstract_id=5188231
3. Accenture Research analysis, 2025. See About the Research section
4. https://hbr.org/2025/01/how-one-company-used-ai-to-manage-the-deluge-of-documents
5. Vaccaro, M., Almaatoug, A., Malone, T. (2024, October 28). When Combinations of humans and AI are useful: A systematic review and meta-analysis. Nature.com: https://www.nature.com/articles/s41562-024-02024-1
6. Dorocka,W. (2024, September 25). How AI is improving diagnostics and health outcomes, transforming healthcare. World Economic Forum: https://www.weforum.org/stories/2024/09/ai-diagnostics-health-outcomes/#:~:text=Machine%20learning%20is%20used%20to,cardiovascular%20risks%2C%20potentially%20saving%20lives
7. Pinto-Coelho, Luis. (2023, December 18). How Artificial Intelligence Is Shaping Medical Imaging Technology: A Survey of Innovations and Applications. NIH – National Library of Medicine – PMC PubMed Central: https://pmc.ncbi.nlm.nih.gov/articles/PMC10740686/#:~:text=Through%20the%20analysis%20of%20medical,%2C%20physiology%2C%20and%20disease%20characteristics
8. Vaccaro, M., Almaatoug, A., Malone, T. (2024, October 28). When Combinations of humans and AI are useful: A systematic review and meta-analysis. Nature.com: https://www.nature.com/articles/s41562-024-02024-1
9. Felten, E., Manav, R., Seamans, R. (2021, April 28). Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses. Strategic Management Journal – Wiley Online Library: https://onlinelibrary.wiley.com/doi/full/10.1002/smj.3286
10. Moorhead, P. (2025, January 15). Nvidia, Accenture And Kion Use Physical AI To Transform Warehousing. Forbes: https://www.forbes.com/sites/patrickmoorhead/2025/01/15/nvidia-accenture-and-kion-use-physical-ai-to-transform-warehousing/
11. Cappelli, P., Yakubovich, V., Thakur, B., Shenoy, A. (2025, January 7). How One Company Used AI to Manage the Deluge of Documents. Harvard Business Review: https://hbr.org/2025/01/how-one-company-used-ai-to-manage-the-deluge-of-documents
12. Shook, E., Rodriquez, D., (2020). Care To Do Better: Building trust to leave your people and your business Net Better Off. Accenture: https://www.accenture.com/content/dam/accenture/final/a-com-migration/thought-leadership-assets/accenture-care-to-do-better-report.pdf#zoom=40
13. Narain, K. (2025, January 7). Technology Vision 2025/AI: A Declaration of Autonomy—Is trust the limit of AI's limitless possibilities? Accenture: https://www.accenture.com/content/dam/accenture/final/accenture-com/document-3/Accenture-Tech-Vision-2025.pdf#zoom=40
14. Azagury, J., Close, K. (2024, July 23). Change Reinvented: A blueprint for continuous, meaningful, successful change. Accenture: https://www.accenture.com/content/dam/accenture/final/accenture-com/document-2/Accenture-Change-Reinvented-Report.pdf#zoom=40
15. Dixon, J. (2020, November 2). The Employment Consequences of Robots: Firm-Level Evidence. Statistics Canada: https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2020017-eng.htm
16. (2025 March 13) IBM Business Automation Workflow as a service. IBM.com: https://www.ibm.com/docs/en/watsonx/watson-orchestrate/current?topic=apps-business-automation-workflow-as-service&utm_source=chatgpt.com

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