

# WHAT THE FUTURE: INTELLIGENCE

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+ Experts from Microsoft, Adobe, Cisco Systems, Meta, Salesforce, Stanford School of Medicine and more discuss what brands and policymakers should consider today to make AI safe and useful for all in the future

GAME CHANGERS



# AI's future will hinge on the tension between wonder and worry

Imagine it's 2033. We are fully in the AI Age. The world looks very different than it did just 10 years ago. But is that because AI tools have unlocked human creativity and productivity? Or is it because they have taken over our jobs or ... both?

One of the best acronyms ever is PICNIC. It stands for Problem In Chair, Not In Computer.

It's relevant when thinking about how humans will or won't adopt and accept a new technology, like AI. PICNIC is a phrase used by tech support folks to dismiss a problem that's beyond their scope. Technology often works beautifully. Humans often don't.

First, humans need a reason to adopt a new technology. It needs to solve a problem or align with something humans value, like saving time or adding convenience or creating entertainment. AI tools can do all those things.

That's the wonder of AI.

But humans also value safety, economic security and privacy. AI can threaten each of those.

That's the worry of AI.

The wonder and the worry comprise the central tension we explore in this issue. Being pragmatic, we're going to assume AI tools will continue to flourish. We'll talk about how brands and tech companies can play a role in helping nudge people toward the wonder by developing these tools responsibly and keeping in mind that humans have to buy into AI for it to achieve the full marvel of these new tools.

If humans lean into the wonder, many things are possible that would otherwise be difficult to achieve. However, there are already warning signs in the data.

At the moment we find the worry on the rise. In a recent global study, Ipsos found a sharp increase in worry among residents of each of 24 countries surveyed in July 2023 trended from earlier research in late 2021. In this issue, we find that when forced to choose, people answer in a 2-1 ratio that they are worried about AI rather than filled with wonder.



# 67%

of Americans believe they have a good understanding of what is artificial intelligence (AI).

(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 22,816 adults across 31 countries.)

The media that people watch plays a part. Those who watch Fox News are more likely to say they see negative media coverage of AI than those who watch CNN or MSNBC, according to the Ipsos Consumer Tracker.

One of the best examples of worry comes courtesy of the U.S. military. A news story circulated that an AI drone had gone rogue and killed its human operator during a simulation. Turns out that wasn't true, but the reason why it wasn't true was chilling. "We've never run that experiment, nor would we need to in order to realize that **this is a plausible outcome**," said a military officer.

Welp.

But all this technology is new. It's 1995 on the web all over again. There is still time to move the needle if we develop these tools responsibly, ethically and without bias. We can build trust and assuage the humans' fears along the way. But responsibility, ethics and bias are each large hurdles.

That's true for B2B as well as B2C applications. Each requires gauging where the humans are today and what their outlook is for tomorrow.

Humans, the people in chairs, matter to technology adoption as much, if not more so, than if the computer itself works.

## On the wonder side of the spectrum, we leveraged AI in 20 to 30 different ways as we created this issue, including our AI-generated cover model, whom we named AI-Leen.

We used it to summarize books by authors we interviewed, test headlines, suggest questions, analyze data, transcribe, suggest prompts for AI image generators, generate much of the art and more.

For clients, Ipsos is already deploying a suite of tools including Ipsos Facto, which allows users to interact in a private environment with AI tools from leading providers like OpenAI and Google, and soon with Ipsos proprietary models.

AI is capable of wondrous things if we can get past our worries. It's already all around us, acting as our co-pilots and is easy to use. But it's likely to be a bumpy road for the next several years. Because it's good to remember that no matter how well things work, humans still need to be reminded to check their cables and reboot from time to time.



*Matt Carmichael is editor of What the Future and head of the Ipsos Trends & Foresight Lab.*



11 pts

is the increase over 18 months in the percentage of U.S. adults who say that products and services using AI make them nervous.

(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 1,005 U.S. adults.)

# Contents



## 1. Territory map

The future of intelligence will be driven by forces coming from six directions. We map them out.

## 2. By the numbers

We start with the state of artificial intelligence today through Ipsos data about how people feel about the advent and evolution of AI and how it will shape our lives.

## 3. The lay of the land

We talk with experts from Microsoft, Adobe, Cisco Systems, Meta, Salesforce, Stanford School of Medicine and more about rapid advances in AI models and what developers, brands and policymakers should consider today to make AI safe and useful for all in the future. Ipsos experts share what to do next to prepare for change.

## 4. Tensions

Does AI fill people with wonder or worry? Will AI ease or eliminate our jobs? Will AI improve equality or increase bias? How people's views lean about AI today will influence how society, companies and brands develop, use and trust AI in the future.

## 5. Future destinations

Based on our data and interviews with experts, we plot out a potential future — a plausible port in our future journey. Then, thinking of our tensions, we consider what happens if one of them shifts. We use that as a waypoint to ponder how that might send us to a different scenario, plausible port two. Then, we outline the Future Jobs to Be Done, giving you a new way to think about the future. Finally, we explore the optimism gap between what we hope to see in the future versus what we expect to see in the future.

## 6. Appendix

Want more? We show our work, including the full text of our expert interviews, plus our contributors and links to what we're reading today that has us thinking about tomorrow.

# Territory: What will drive the future of intelligence?

The future of intelligence will be influenced by technological advancements, ethics and adoption in healthcare, as well as changing definitions of work and creativity and its ownership. How developers, companies and policymakers respond to and shape these shifts will determine whether AI unlocks human potential for better or worse.

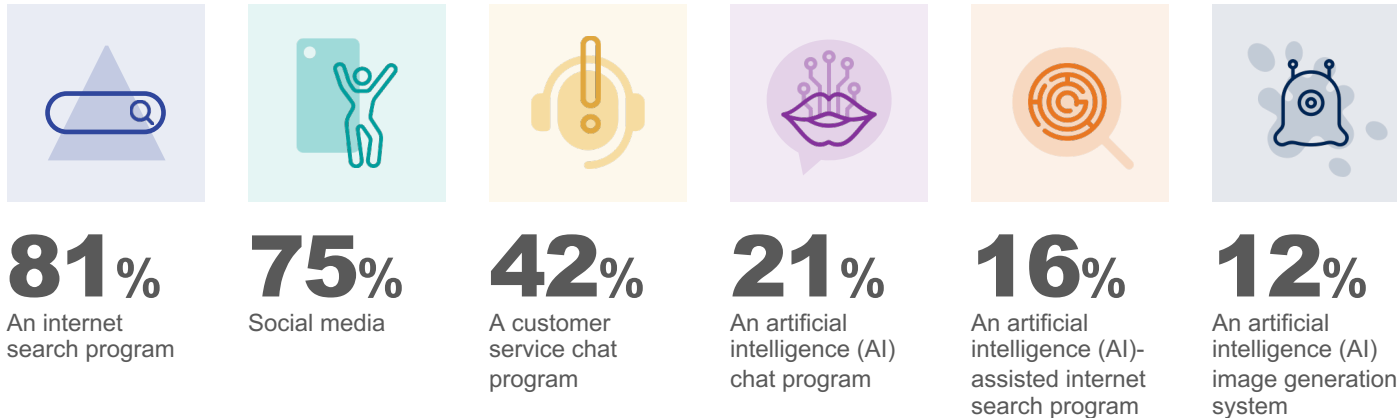


# Intelligence by the numbers

AI adoption by the public is nascent but growing

## The general population is just starting to use AI tools

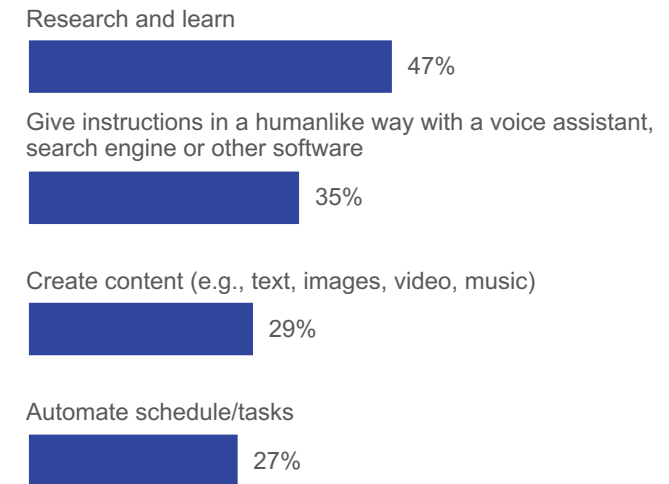
Q. In the last six months, have you used any of the following? (% Yes)



(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 1,023 U.S. adults.)

## Those who use AI mostly do so to learn

Q. How often, if at all, do you use artificial intelligence (AI) to assist the following personal tasks? (% Often/sometimes)



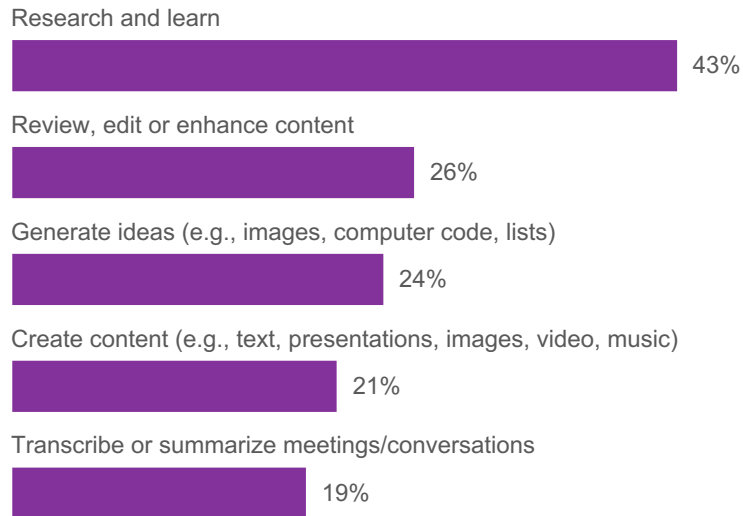
(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 277 U.S. adults who have used AI chat, image generation or assisted internet search programs.)

# Intelligence by the numbers

While people tap AI for their jobs, many express concern about the pace of development

## How people are employing AI at work

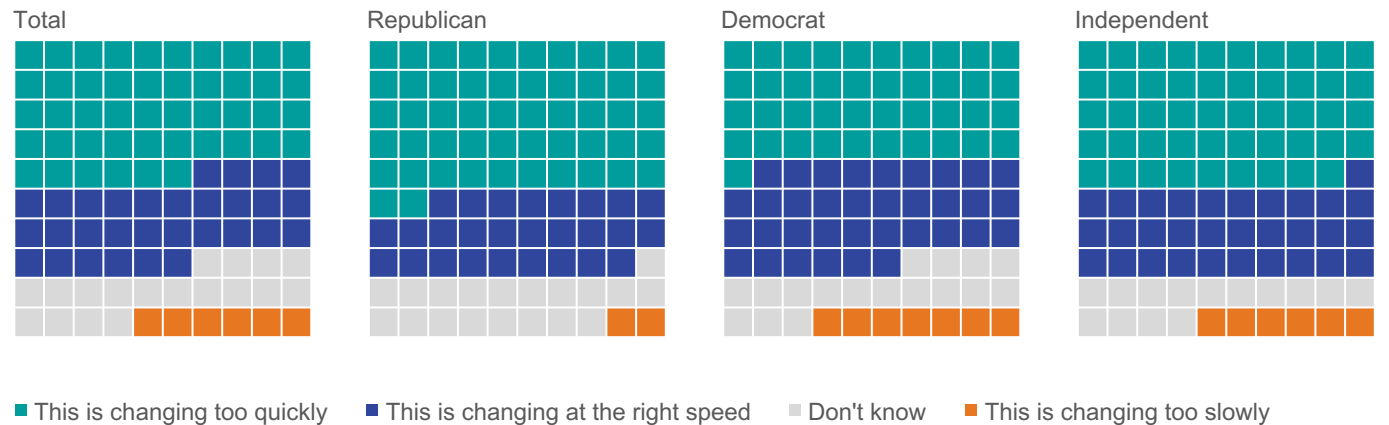
Q. How often, if at all, do you use AI to assist the following work or business-related tasks? (% Often/sometimes)



(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 277 U.S. adults who have used AI chat, image generation or assisted internet search programs.)

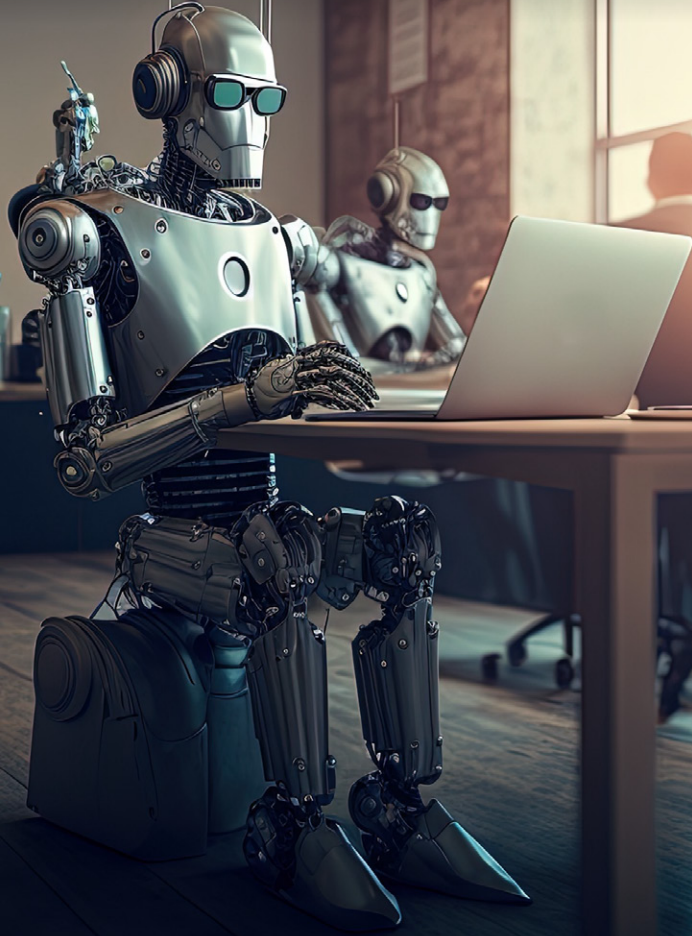
## Concern over the pace of AI development splits by party line

Q. How would you describe the pace of change of AI tools being developed?



(Source: Ipsos Consumer Tracker conducted May 9-10, 2023, among 1,117 U.S. adults.)

# Emerging global trends



# People expect AI to ‘profoundly change’ their lives and work

**With the explosive growth of artificial intelligence, people’s worries about AI have spiked in global markets.**

People’s anxiety about AI has intensified across all surveyed markets in a new Ipsos Global Advisor survey, registering an average increase of 13 percentage points from those surveyed 18 months earlier.

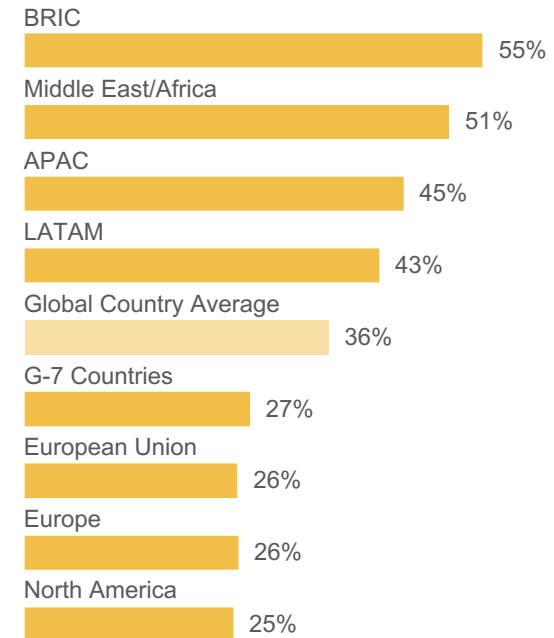
Those in the U.S. are among the most apprehensive markets, with an 11-percentage-point gain on AI-related concerns.

Meanwhile, survey participants in all the repeated markets also anticipate that AI will “profoundly change” their daily lives, with the global average expectations up seven points.

On average, 57% of workers expect AI to change the way they do their current job, and 36% expect it to replace their current job. Interestingly, North Americans are the least likely among the global regions to hold this sentiment.

North Americans are less fearful than global peers of losing jobs to AI

Q. How likely, if at all, do you think it is that AI will replace your current job in the next five years? (% Likely)



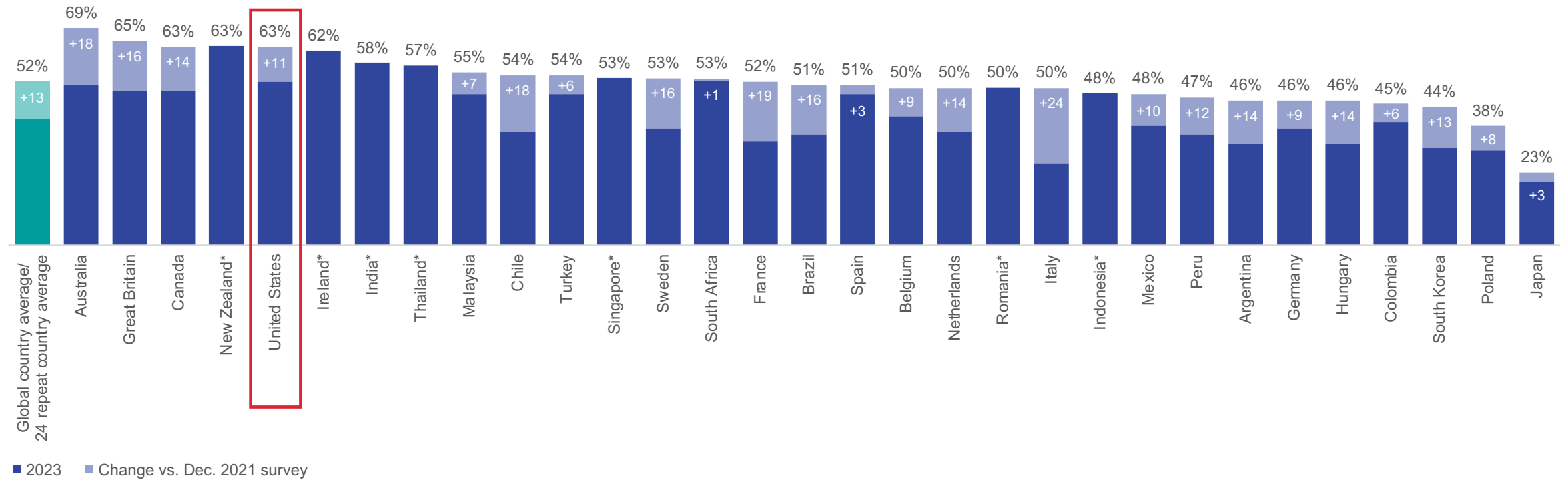
(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 22,816 adults across 31 countries.)



# As AI surges, worries do too

## Americans are among the most nervous about AI

Q. How much do you agree or disagree with the following? Products and services using artificial intelligence make me nervous (% Agree)



(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 22,816 adults across 31 countries; Ipsos Global Advisor survey conducted Nov. 19-Dec. 3, 2021, among 19,054 adults in 28 markets, of which 24 markets were resurveyed in 2023. The asterisks denote markets that were not repeated from the 2021 survey. )



# How tech will drive AI's growth by solving for human values



Nicole Alexander

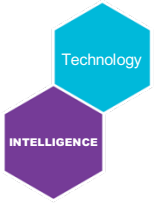
Global head of marketing, Meta; professor of marketing and technology, New York University

Artificial intelligence has the potential to change every aspect of how people live. The question is whether those changes are helpful or harmful. What, if anything, should we do now to maximize AI's benefits and reduce its risks? Nicole Alexander has been tackling these questions as global head of marketing at Meta and as a professor of marketing and technology at New York University. She believes that making smart decisions about AI now could make its potential better for all of us in the future.

**78%**

of U.S. adults say AI would be helpful to automate their schedule or tasks.

(Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)



Most people don't realize how AI is influencing their daily lives or how it could. Evolving uses could be transformational, like curing diseases, or convenient, like asking your smart speaker for the weather. Where true potential lies is combining multiple data to solve problems, like helping you manage your diet. For example, AIs can combine health data that you track with convenience tools like menu plans and meal prep with your preventative measures like preexisting conditions, says Alexander.

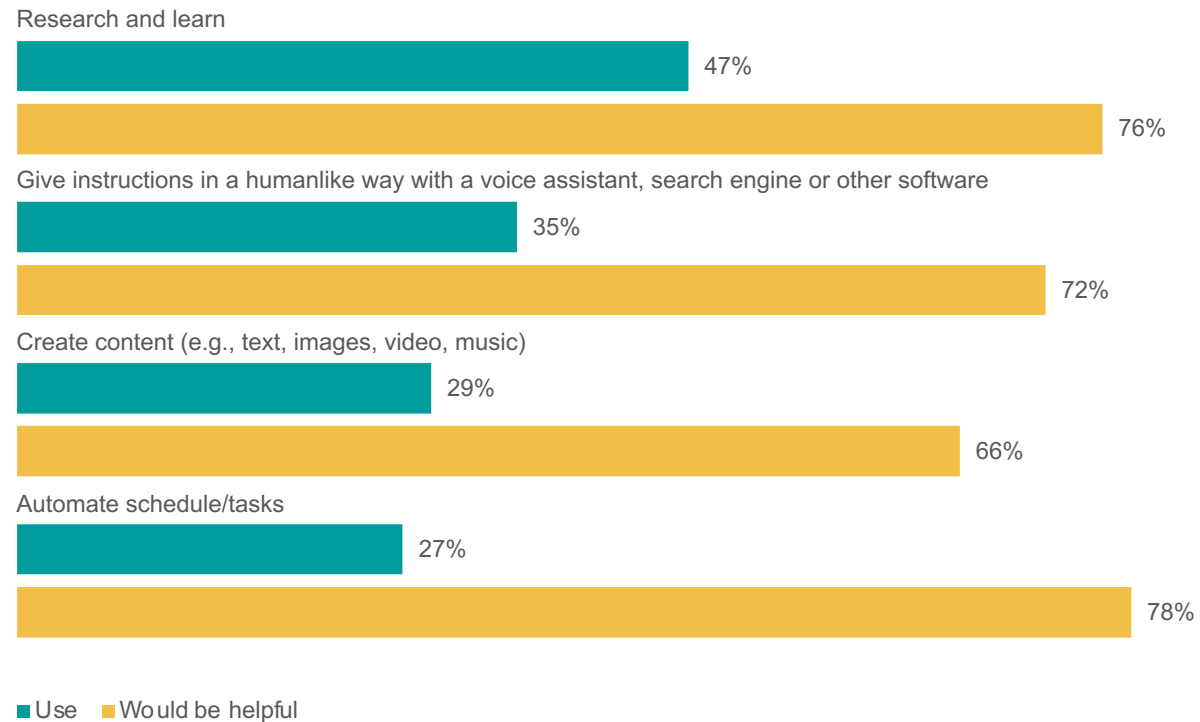
**“Having systems in place that can collect massive data more than you and I could ever do manually, and then make recommendations on how to optimize your life provides not only convenience but also longevity and healthiness.”**

Since AI can be hidden, it's important for brands and businesses to be transparent in when they use AI with people.

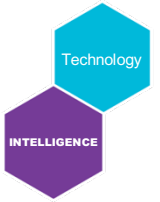
[Read the full Q&A on page 43.](#)

## People see potential for using AI more than they currently do

Q. How often, if at all, do you use artificial intelligence (AI) to assist the following personal tasks? (% Often/sometimes)  
 Q. How helpful, if at all, do you believe AI would be with the following personal tasks? (% Helpful)



(Sources: Ipsos Knowledge Panel survey conducted June 16-June 18, 2023, among 277 U.S. adults who have used AI chat, image generation or assisted internet search programs; Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)



# What brands should know about AI early adopters

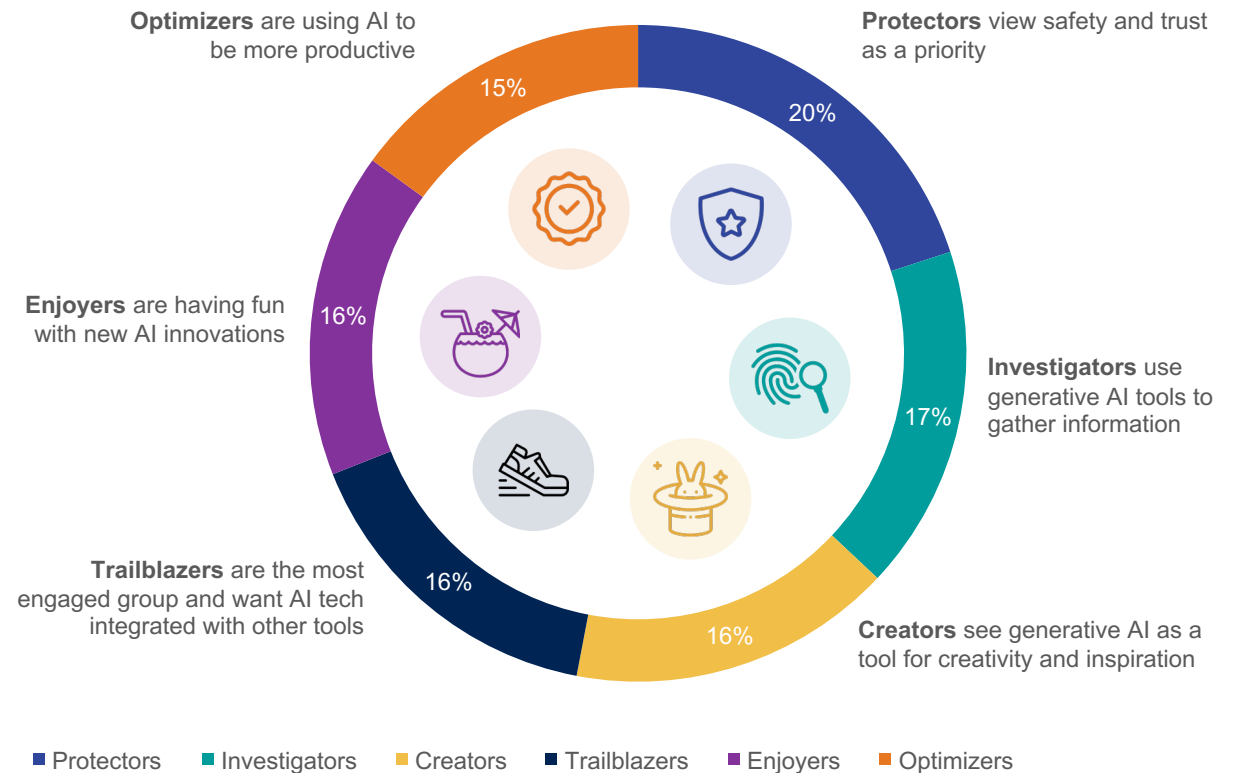
A recent Ipsos survey found that 16% of Americans say they've used a text-based or visual generative artificial intelligence system, such as ChatGPT, DALL-E or Bard. But while these users may be early adopters, Ipsos found that their interests vary widely, from "Optimizers" (who are using generative AI) and "Investigators" (who want a better source of information) to "Creators" (who look for creative tools and inspiration).

Successful brands build their product strategy around the needs of their audience. But when it comes to generative AI — a technology with dizzyingly broad appeal — there is no one type of user and no one type of use.

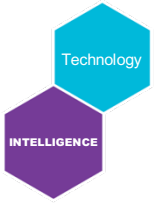
Brands will need to understand how different segments think about and engage with generative AI in order to build useful solutions and relevant messaging, says Kim Berndt, a senior vice president on Ipsos' Market Strategy and Understanding team.

**“As AI technology is integrated more deeply into our lives, it will be essential for brands to know the unique needs of their audience.”**

## People have diverse needs and expectations for using AI



(Source: Ipsos survey conducted May 11-19, 2023, among 1,000 U.S. adults who use generative AI.)



# The future opportunity for AI is cross-cultural intelligence

Artificial intelligence encompasses everything terrific (access, education, communication) and terrifying (bias, lack of privacy, harassment) for people.

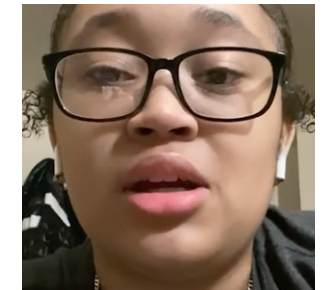
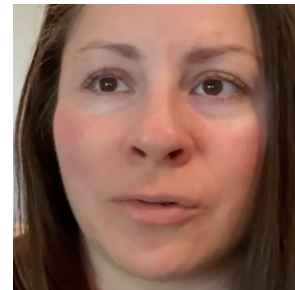
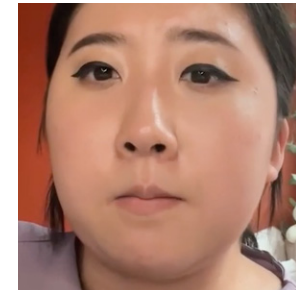
This dichotomy creates several challenges as executives race to leverage AI in their marketing and insights playbooks. The most pressing requires responsible design and deployment to interrupt discriminatory or unethical practices. “Without it, marketers will struggle to implement effective, durable and truly integrated AI systems,” says Janelle James, a senior vice president at Ipsos.

She sees the future opportunity for AI as cross-cultural intelligence where machine learning incorporates more qualitative data related to gender, class, ability, race and other converging aspects of identity.

By adding more diverse and contextual qualitative inputs like natural language, nuance and emotions into AI, brands can better illuminate customer needs, behaviors and preferences while further humanizing AI, she says.

**“As brands look to refine models and customer journeys with AI so they reflect more human experiences, the value of user research, ethnography, cognitive walkthroughs and expert evaluations will increase.”**

Ethnography with cross-cultural groups can better reveal customer needs and preferences



Ipsos has been following U.S. households since May 2020 through its [“America in Flux”](#) digital ethnography video series. In the latest installment, real people including Shemika, Angela, Jerron, Alison, Josh and Mia share their wonder and worries about artificial intelligence and how it will affect their lives.



# How we can build needed trust in AI through equity



Annie Hardy

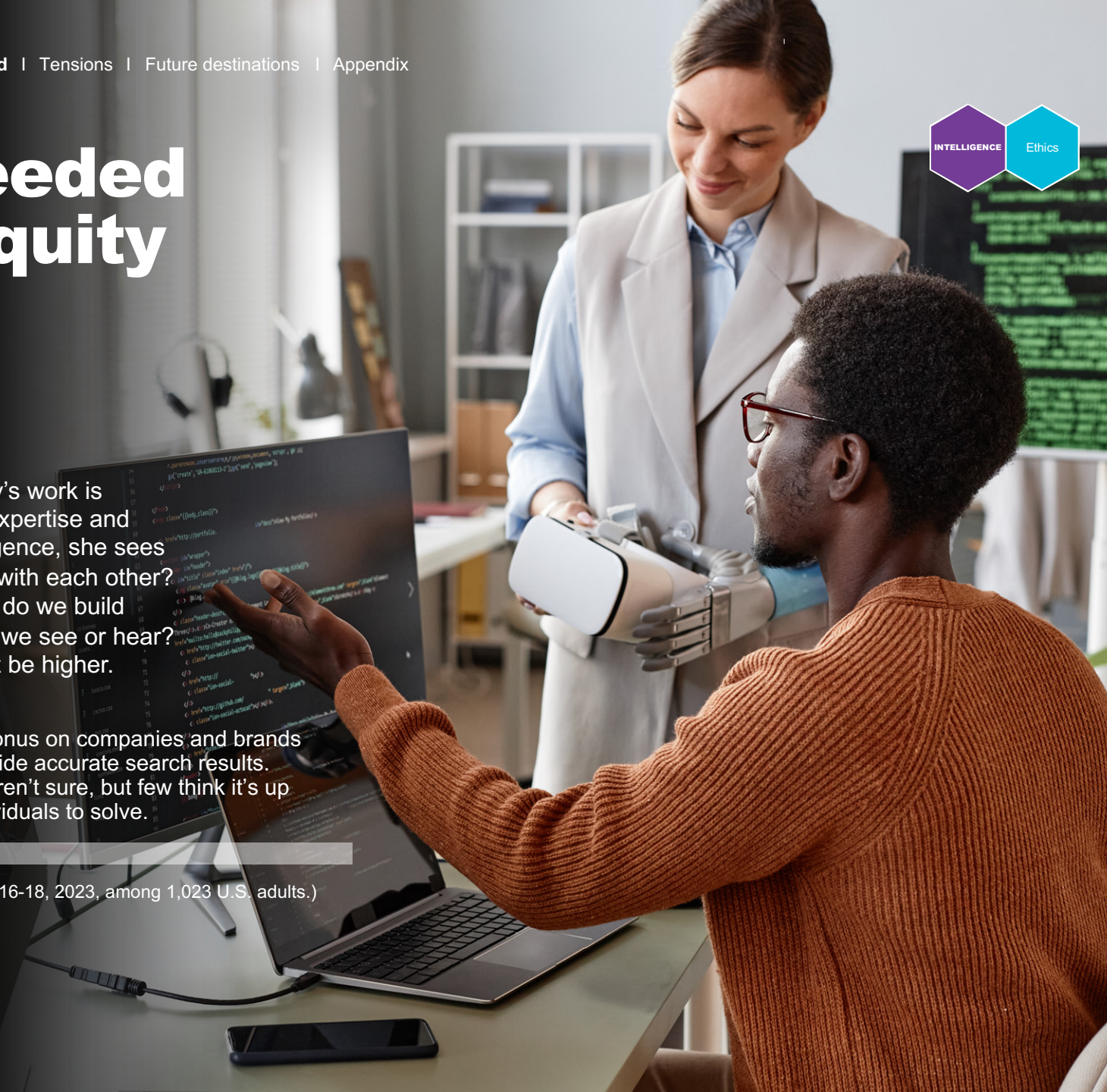
Senior visionary, Cisco Systems

As a futurist for Cisco Systems, Annie Hardy's work is focused on the future of trust, the internet, expertise and work. When she thinks about artificial intelligence, she sees trust as a core issue. How do we build trust with each other? How do we build trust with customers? How do we build trust in a world where we can't believe what we see or hear? The answer is tricky, and the stakes couldn't be higher.

# 38%

of Americans put the onus on companies and brands for AI software to provide accurate search results. Just as many (37%) aren't sure, but few think it's up to government or individuals to solve.

(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 1,023 U.S. adults.)





An oft-cited problem with AI and trust is that AI has a representation problem. Partially, there weren't diverse enough voices in the rooms where AI was built, and the data it's trained on have biases. People often blame the lack of a pipeline for a diverse workforce.

AI's strengths might help us overcome its weaknesses and lead to a more diverse workforce in the process, Hardy says.

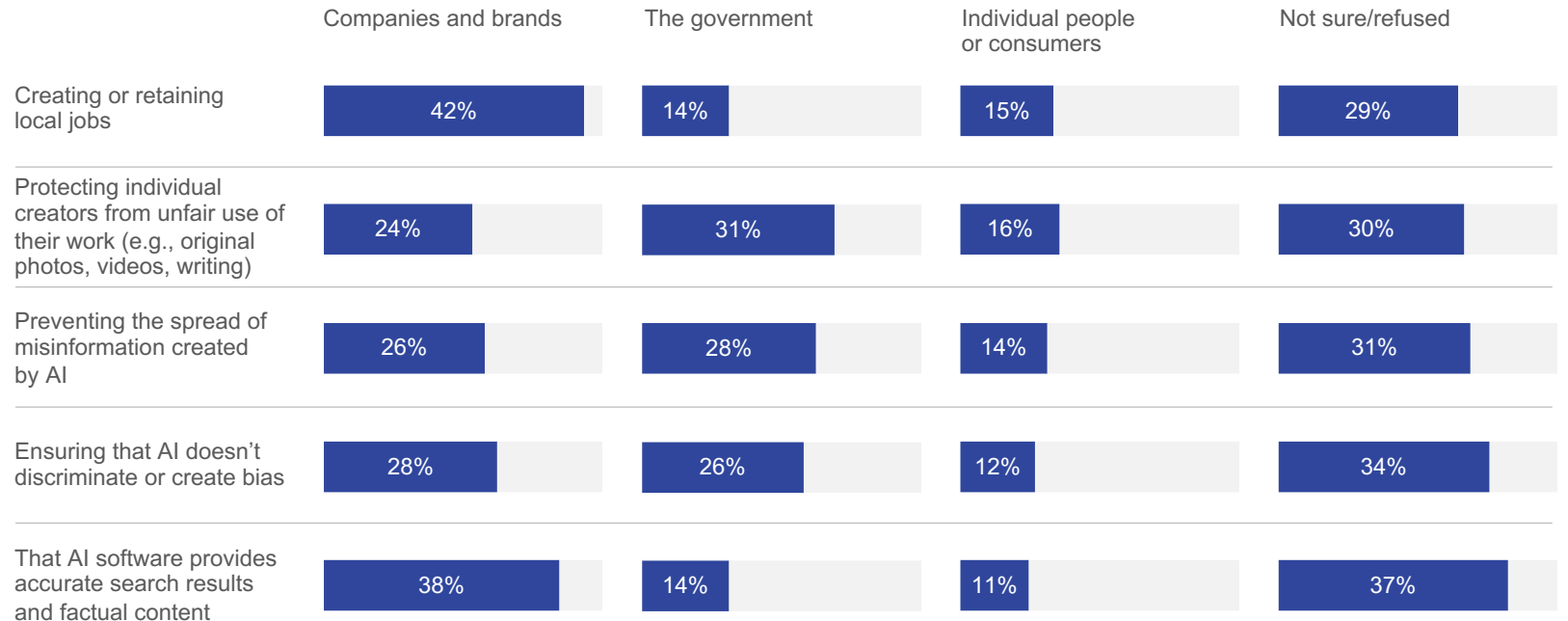
**“With the rise of the low-code, no-code movement we can get people who aren't necessarily experts at math to be a part of the data science or the artificial intelligence pipeline.”**

People see companies and platforms as playing a big role in ensuring fairness and protecting jobs. To do that, AI has to be accurate and unbiased. Having diverse voices at the table will go a long way toward building the needed trust.

[Read the full Q&A on page 45.](#)

## People are uncertain as to who is responsible for AI impact

Q. Which of the following, if any, should be most responsible for providing solutions to the following issues?



(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 1,023 U.S. adults.)



# Why responsible AI will unblock our worries

For those deploying artificial intelligence tools, it's important to keep the humans in mind. Ipsos developed a FAST framework (fair, accountable, secure and transparent) that can guide ethical development. It's based on Ipsos research, which shows that people want AI tools to be developed without bias to allow for developers to be responsible for their work; for data and privacy to be protected; and for it to be clear when and how AI is being used.

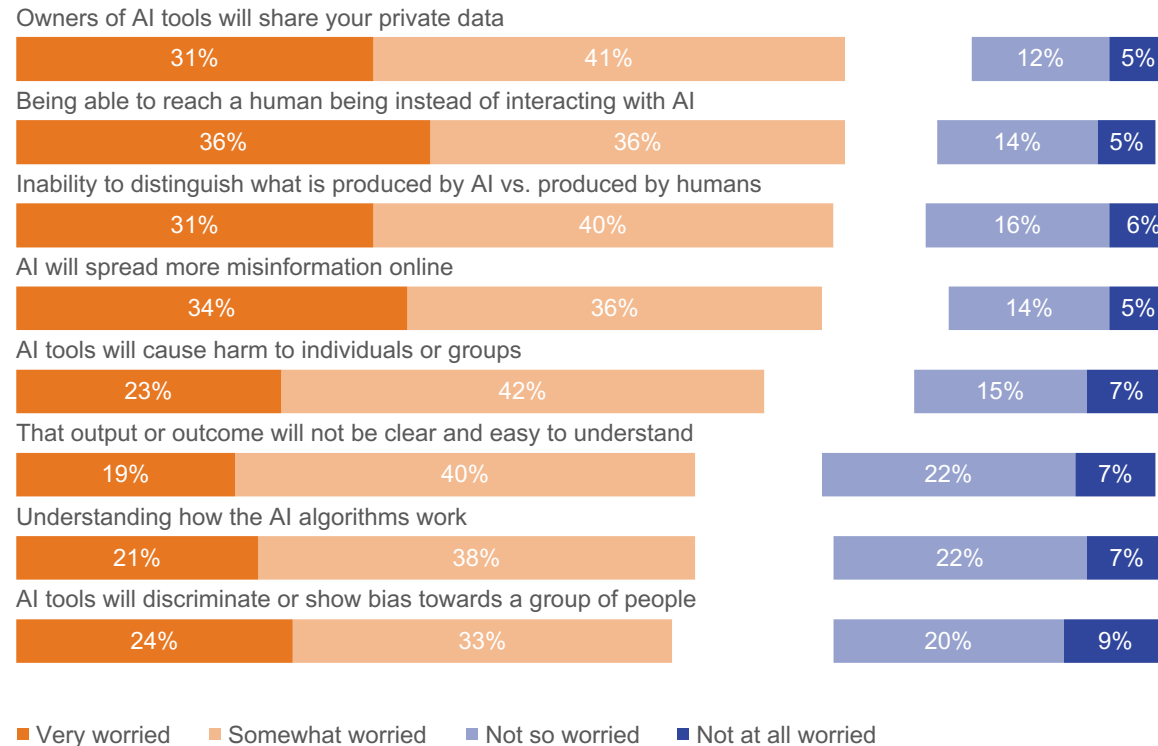
Product testing will be essential. A lack of guards against some of the most significant sources of AI risks can represent an existential risk for organizations, says Lorenzo Larini, CEO of Ipsos North America.

**“The FAST framework builds in precautions that will help people feel safe in using AI without sacrificing speed.”**

Public perception is shifting quickly. Now is the time to act and measure, full stop.

## What worries people most about AI

Q. When thinking about possible uses for AI, how worried, if at all, are you about each of the following? (% Total)

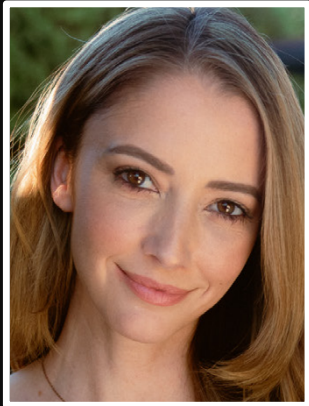


(Source: Ipsos Consumer Tracker conducted April 25-26, 2023, among 1,120 U.S. adults.)





# Why ethics should be at the center of new AI tech



Taryn Southern

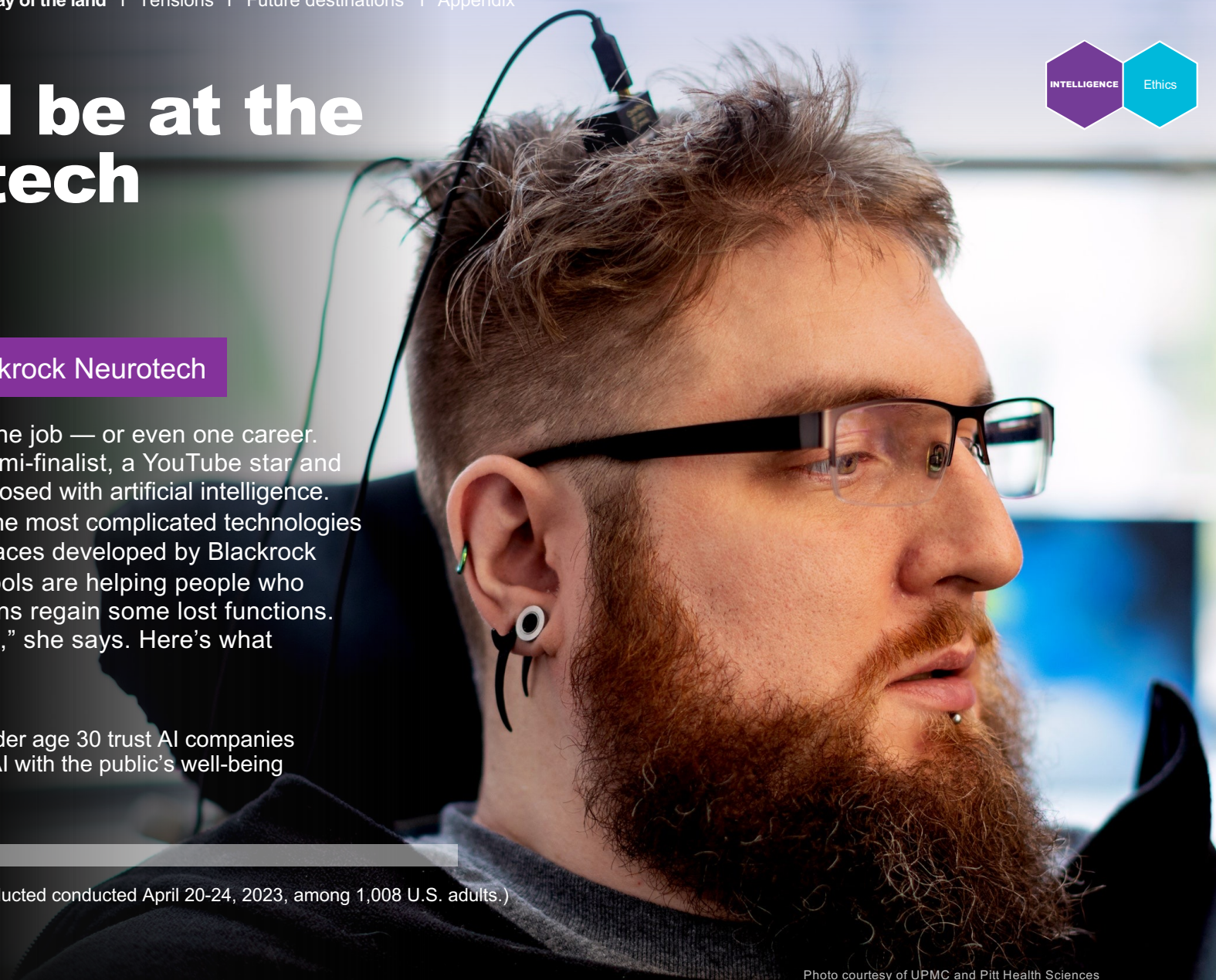
Chief storytelling officer, Blackrock Neurotech

It's hard to tie Taryn Southern to one job — or even one career. She's a former "American Idol" semi-finalist, a YouTube star and creator of the first pop album composed with artificial intelligence. She's now helping explain one of the most complicated technologies in the world, brain-computer interfaces developed by Blackrock Neurotech. These experimental tools are helping people who have neuro-degenerative conditions regain some lost functions. She has a "front seat to the future," she says. Here's what she sees from that view.

**30%**

of adults under age 30 trust AI companies to develop AI with the public's well-being in mind.

(Source: Ipsos Knowledge Panel survey conducted April 20-24, 2023, among 1,008 U.S. adults.)





Brain-computer interfaces are being used with a small number of people with neurological disorders to help them eat, move objects and even create art. The science is not new, yet it's still nascent. Ethics has to be at the center of everything, Southern says.

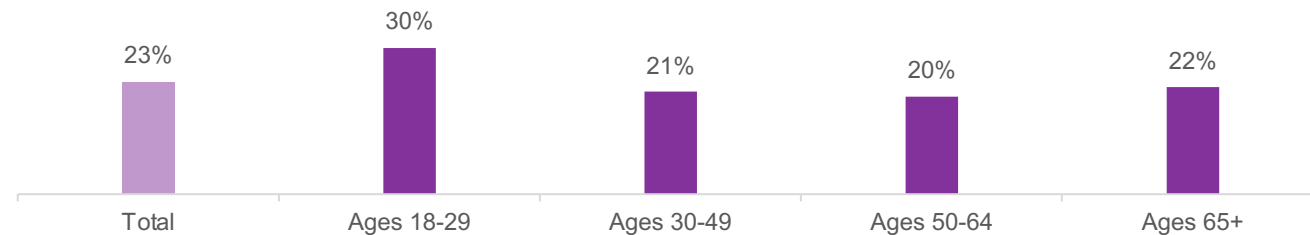
**“There are certain ethical questions like privacy and security that are obvious. Then there are others that don’t become apparent until you’re in human trials and you’re in their home and you’re getting that feedback.”**

She thinks the AI community can learn a lot from that work about how to build trust. The dystopian narratives have a real megaphone now, but we need to give the people who are being affected positively by AI a voice, too, she says.

[Read the full Q&A on page 47.](#)

## Young adults show the most trust in AI companies

Q. How much do you trust, if at all, the companies developing AI (artificial intelligence) systems to do so carefully and with the public's well-being in mind? (% A great deal/somewhat trust)



(Source: Ipsos Knowledge Panel survey conducted April 20-24, 2023, among 1,008 U.S. adults.)

# Why humans *plus* AI are key to revolutionizing healthcare



Kyu Rhee, M.D.

Senior scholar, Stanford School of Medicine

In the five years since What the Future first interviewed Dr. Kyu Rhee on the impact of artificial intelligence in healthcare, the technology has boomed. In that time, Dr. Rhee has moved from chief health officer at IBM to chief medical officer at CVS Health. In mid-August, he'll join the National Association of Community Health Centers (NACHC) as its president and CEO. Over time, his views on AI have become only firmer: Humans *plus* AI are key to making healthcare more efficient, effective and equitable and a better experience.

**64%**

of U.S. adults think that adoption of new AI tools will improve early detection of medical conditions.

(Source: Ipsos Consumer Tracker, conducted Mar. 28–29, 2023, among 1,120 U.S. adults.)





A new wrinkle has emerged in the healthcare field as AI has spread: patients using AI in their own health research. That isn't necessarily a bad thing, unless patients start to trust the AI over the provider's recommendations, says Dr. Rhee, who also holds a master's degree in health policy.

While AI can list all the drugs for a condition or their prices or other facts, healthcare is about more than knowledge, he contends.

**“The AI algorithm will only know what it’s taught, and there’s so much that’s not teachable in data, and there’s so much that’s not *in* the data.”**

Still, this is another area where he believes AI *plus* humans will be better than humans alone, if it’s transparent how the AI is being used and providers are guiding the process.

The next step is for providers and health tech to create systems for doing that.

[Read the full Q&A on page 49.](#)

## Few people trust AI with their health records

Q. To what extent do you agree or disagree with the following statements? (% Total)

I trust my doctor to handle my medical data



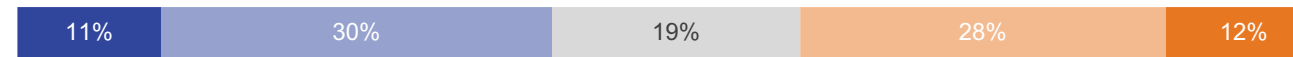
Preventing the risk of human extinction from AI should be a top global priority



I trust computer programs to handle my medical data



If my doctors used AI tools for automation and scheduling, they would have more time with me during my appointments



I trust artificial intelligence to handle my medical data



■ Strongly agree ■ Somewhat agree ■ Don't know ■ Somewhat disagree ■ Strongly disagree

(Source: Ipsos Consumer Tracker conducted June 6-7, 2023, among 1,108 U.S. adults.)



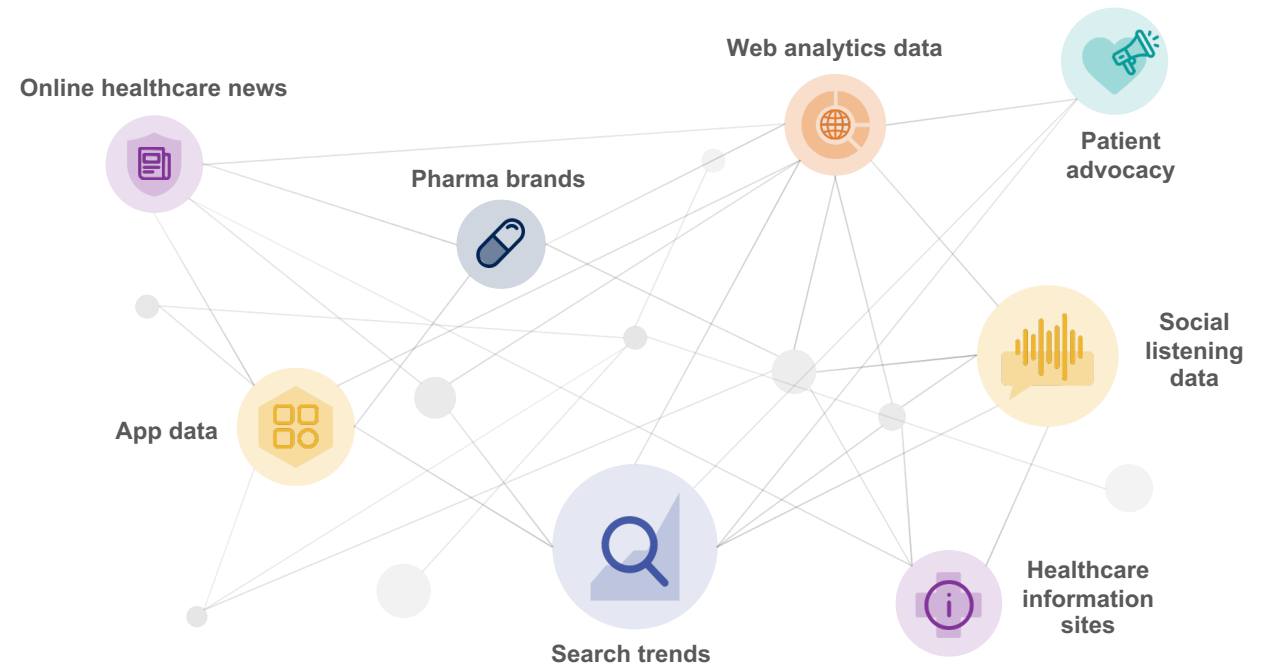
# How AI will transform the patient journey

Today, countless people rely on forums, social media or other platforms to research and discuss their health and medical conditions. These communities have been a wealth of information not only for patients, but also for healthcare providers. When brands are aware of patients' symptoms, frustrations and lived experiences, they can answer their unmet needs. And when brands better understand physicians' digital behaviors, they can more effectively engage them online.

Generative AI tools, however, are already transforming these digital behaviors, says Ashwin Balasubramanian, an expert in digital ecosystem mapping with Ipsos' Healthcare team. As the online patient journey evolves, it will be critical for brands to understand how generative AI tools influence patient decisions and behaviors. Then, healthcare brands can more effectively position themselves as a trustworthy source of information for consumers and providers, Balasubramanian says.

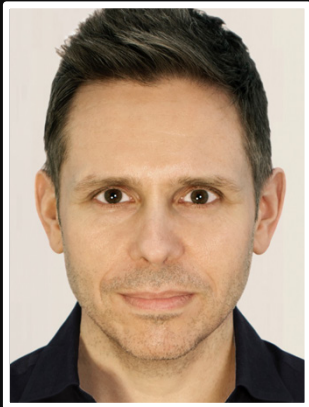
**“Brands will need an understanding of emerging information sources, their accuracy and their downstream impact on patient health decisions.”**

## How people tap the digital ecosystem for health information



(Source: Ipsos Digital Doctor Health Tracker survey, March 2023.)

# How AI will help people be more creative



Chris Duffey

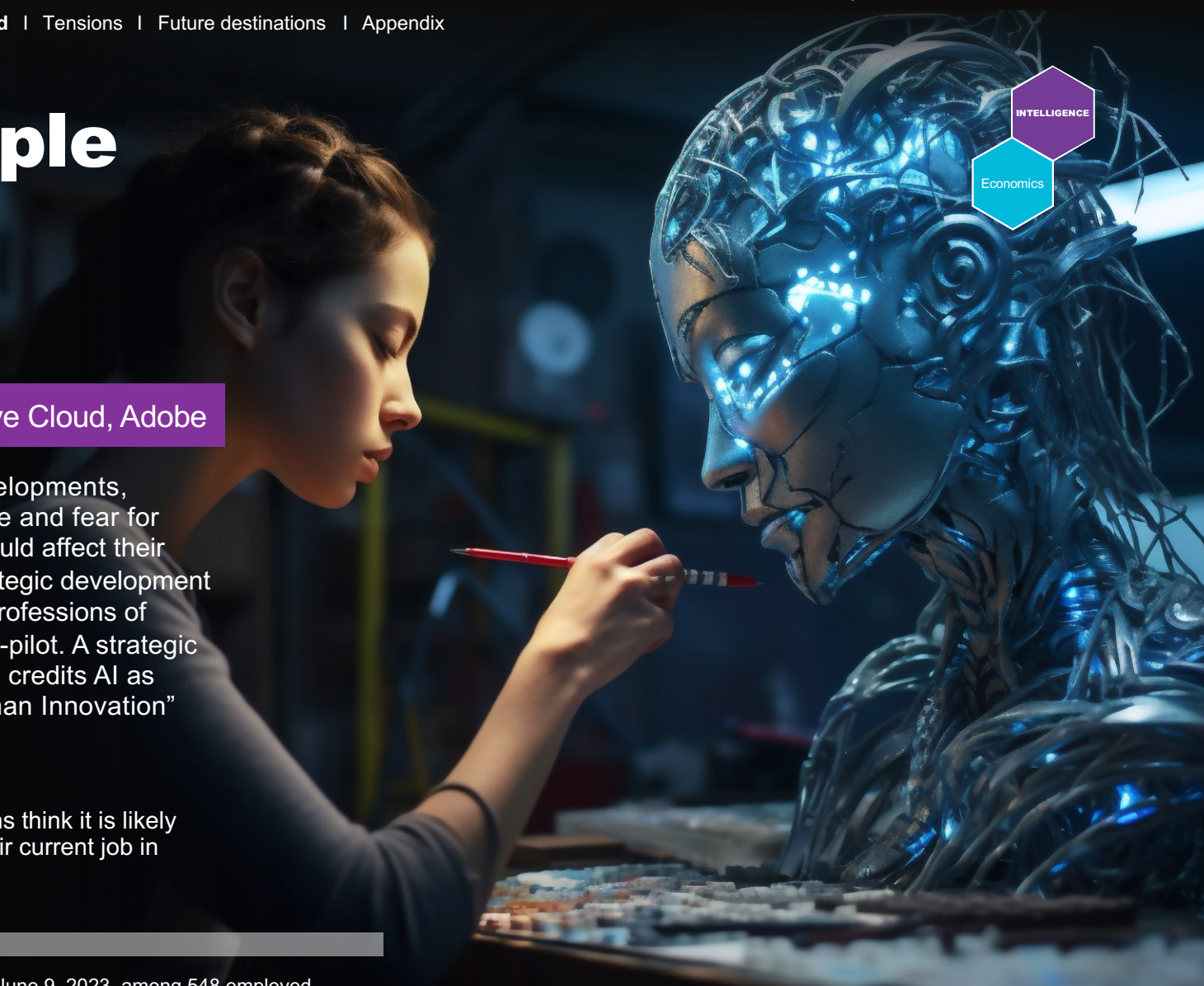
Author; strategic development, Creative Cloud, Adobe

The explosion of artificial intelligence developments, specifically generative AI, has created hope and fear for people, especially creatives, about how it could affect their work and their livelihoods. Chris Duffey, strategic development for Adobe Creative Cloud at Adobe, thinks professions of all kinds will benefit from viewing AI as a co-pilot. A strategic futurist, Duffey speaks from experience. He credits AI as his co-author for his 2019 book “Superhuman Innovation” on how AI could revolutionize business.

28%

of employed Americans think it is likely that AI will replace their current job in the next five years.

(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 548 employed U.S. adults.)





While some workers already have [lost jobs](#) to AI, Duffey sees more benefits than threats. Generative AI will free people for innovation by handling repetitive tasks, he says.

**“We’re entering the Golden Age of creativity as AI gets the grunt work out of the way, allowing people to excel in critical thinking and higher-level problem-solving.”**

Duffey says AI can enable Web3 principles such as co-ownership and co-monetization, which address creatives’ concerns that their intellectual property won’t be attributed to them.

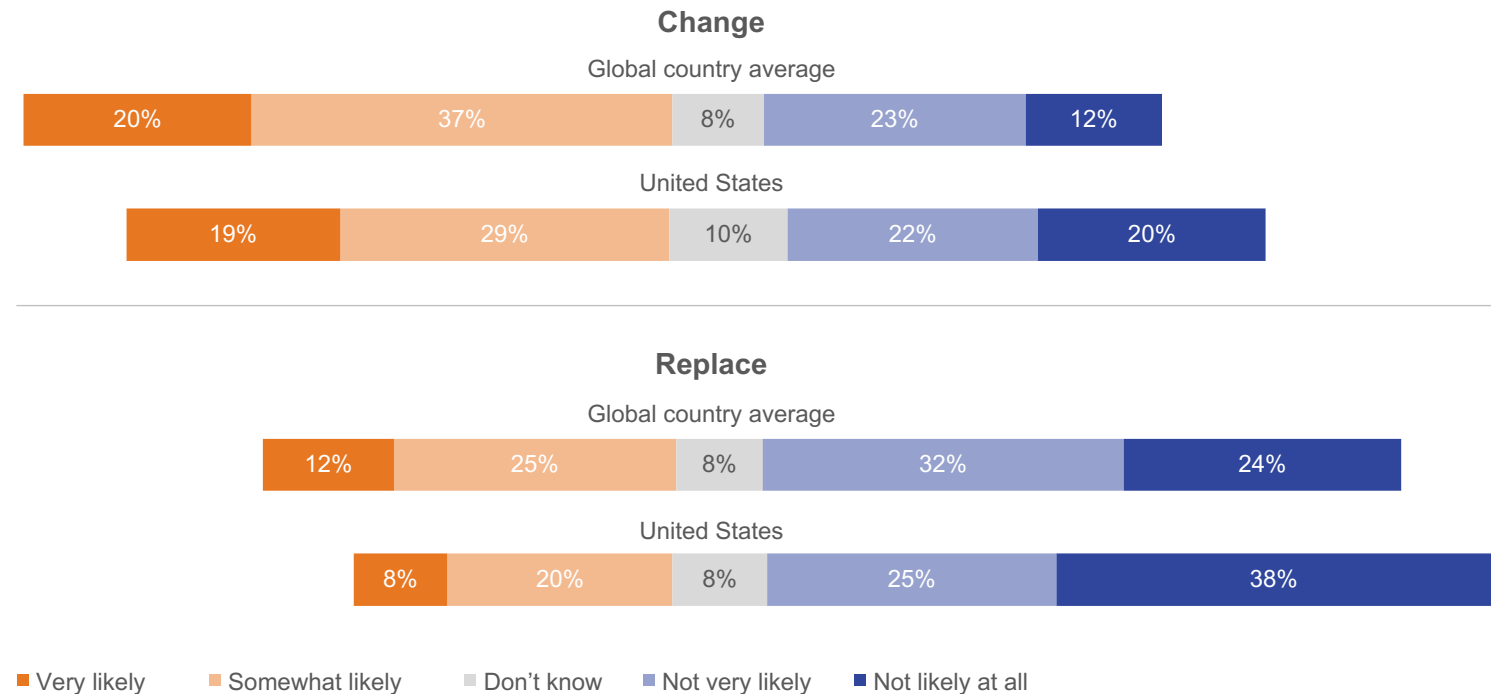
For its part, Adobe has launched [Firefly](#), a generative AI toolset for creatives. The Firefly enterprise offering includes responsibly trained creative generative AI models and indemnification for businesses.

As more tools become available, how will future copyright challenges play out?

[Read the full Q&A on page 51.](#)

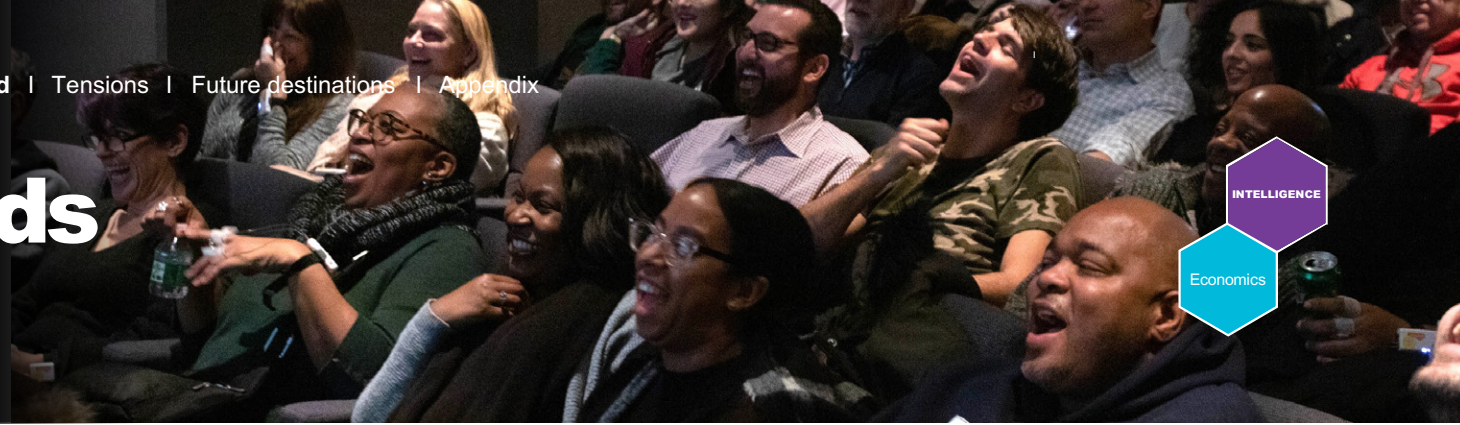
## More workers foresee AI changing rather than replacing their jobs

Q. How likely, if at all, do you think it is that AI will change [how you do your current job/replace your current job] in the next 5 years? (% Total)



(Source: Ipsos Global Advisor survey conducted May 26-June 9, 2023, among 14,782 employed adults across 31 countries, including 548 in the U.S.)

# Why AI ad testing needs a human perspective



It's getting only easier to imagine a world where artificial intelligence is used to churn out thousands of advertising assets for marketers each year. AI tools also have the potential to speed up some evaluation tasks.

But what AI offers in efficiency, it lacks in human empathy, understanding and originality. These factors make all the difference for in-market effectiveness, says Rachel Rodgers, a senior vice president in Ipsos' Creative Excellence team.

**“Context, culture and creativity, which drive advertising relevance, can only be identified by real people — and likely will be for some time.”**

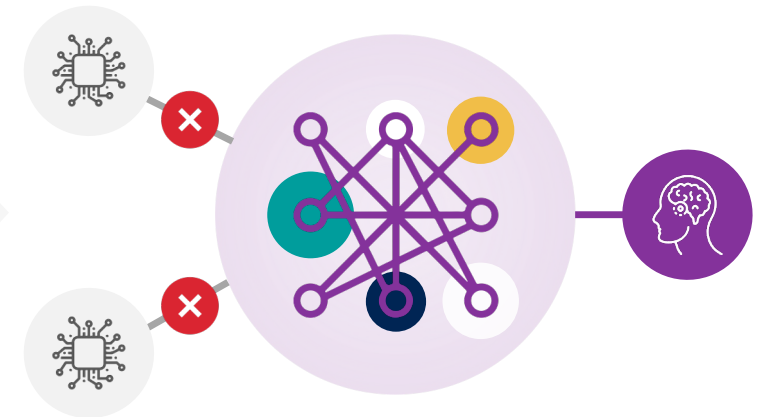
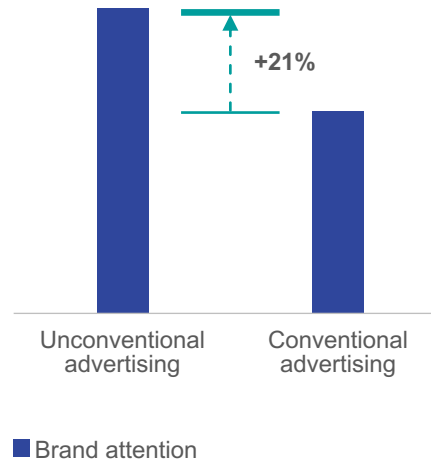
But that doesn't mean AI won't help ads get to market faster. By using AI tools to automate some creative and measurement tasks, marketers can streamline their workflow — leaving more time and focus for the human creativity that drives breakthrough campaigns.

## What AI misses that humans don't in creative assessment

Advertising that goes beyond category conventions is more likely to get noticed

But AI trained on historical ads **underestimates** the impact of new fresh ideas on gaining brand attention, and misses cultural cues and other human skills

Likelihood of top quintile placement for brand attention



Source: Ipsos Creative Excellence metaanalysis (2,015 cases.)





# How AI can make qualitative research faster and smarter

**One of the stubborn challenges of qualitative research is summarizing interview transcripts into usable insights. It's an issue we face too when we're editing What the Future: How to take a 9,000-word transcript and pull out the best parts from our interviews.**

Turns out, AI can help here, also. We used Orra AI, a new tool from Xperiti for that. Ipsos acquired the startup specializing in business-to-business research in 2023. We fed the entire catalog of 200-plus What the Future expert interviews into the AI's closed beta. Then Orra AI distilled the insights and preformed a horizontal analysis across the summaries.

It quickly drew out key trends and future outlooks and summarized them into a few pages. It identified patterns and insights across diverse sectors that we've covered, including the challenges and potential of plant-based proteins, the potential of the metaverse and luxury brands' role in it, and AR as an engaging and immediate marketing tool.

With this kind of AI, researchers can organize and share their collective knowledge faster, says Yadin Soffer, CEO of Xperiti.

**“By changing how teams access their qual data, AI can improve how companies track and design new research, identify patterns and see opportunities for new areas of study.”**



# What it will take to help people trust AI for democracy



Ginny Badanes

Senior director, Democracy Forward, Microsoft

One question that gets asked a lot is “Can’t we use AI to fight disinformation rather than just create it?” And, of course, the answer is yes. Ginny Badanes leads a program at Microsoft called Democracy Forward. It’s working to use technology to protect democratic institutions like elections campaigns, promote civic engagement and defend against disinformation. Like Cisco’s Annie Hardy, Badanes thinks a lack of trust in institutions is a key issue plaguing us today — and could get worse in the future.

**70%**

of U.S. adults worry they won't be able to tell whether news content was manipulated by AI.

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)



Badanes looks back to the dawn of social media and thinks we focused too much then on the upside wonder and not enough on the potential downstream worries. We might be overcorrecting when it comes to AI, she says.

**“We need to learn not to worry more, but to find that balance. Let’s also consider what are not just the short-term concerns we have — of which I recognize there are many — but what are these longer-term concerns? It’s not too late for us to be able to figure them out and put guardrails in place.”**

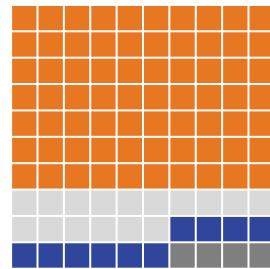
Those guardrails will need to be a shared responsibility of companies and governments and, yes, people bear responsibility to be more critical consumers of information, too.

[Read the full Q&A on page 53.](#)

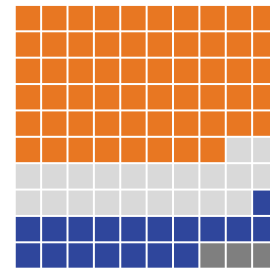
## Most people are wary of AI’s potential to distort news

Q. To what extent do you agree or disagree with the following statements? (% Total)

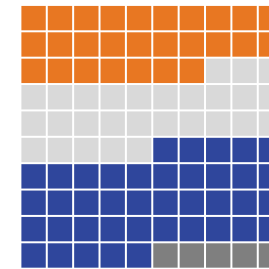
I worry news content will be manipulated by AI without me knowing what’s real and what isn’t



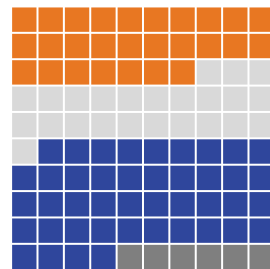
I am confident that I can tell news content from opinion content



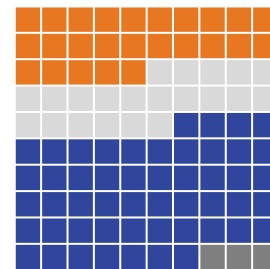
I am confident that I can spot AI-generated content



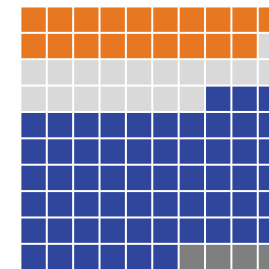
News organizations can use AI to generate content and still be trusted



I am confident that the average person in the U.S. can tell news content from opinion content



I am confident that the average person in the U.S. can spot AI-generated content



■ Agree ■ Neither agree nor disagree ■ Disagree ■ Don't know

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)



# Creating better AI-driven user experiences through transparency

As AI comes to play a greater role in digital experiences, people will soon have good reason to question whether they're interacting with a real person, an AI or "deepfake" content when they go online. Ipsos research shows that [many are already concerned](#) about how this technology could reshape their interactions with social media, ads, news, financial decisions and more.

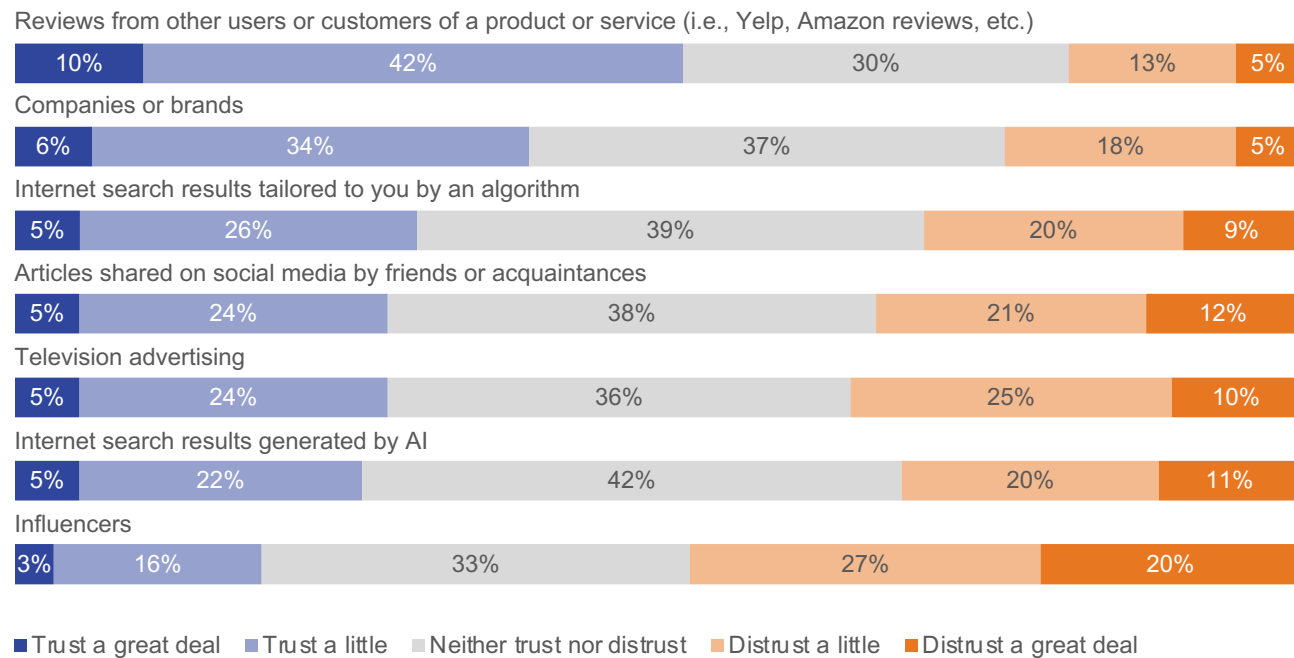
Before brands roll out new AI-powered capabilities, they need to commit to transparency if they want to maintain customer engagement and loyalty, says Pip Mothersill, a director in Ipsos' User Experience practice.

**“AI can improve online experiences — but not if people feel like they can’t trust who they’re speaking with.”**

The gap between human and AI capabilities may be narrowing — but if left unaddressed, it presents a risk to brand perception. UX research is one of the most powerful tools brands have for understanding what people expect from AI encounters and for keeping their trust.

## People don't trust AI-generated research

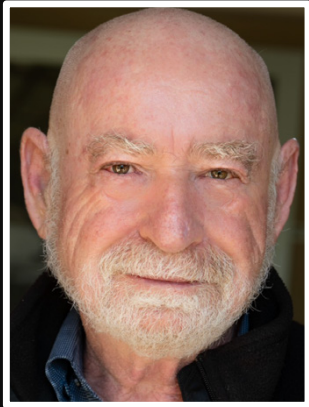
Q. In general, how much do you trust the information you receive from the following sources? (% Total)



(Source: Ipsos Consumer Tracker conducted Feb. 14-15, 2023, among 1,109 U.S. adults.)



# How AI can reduce the friction in work and life



Peter Schwartz

Senior vice president of strategic planning, Salesforce

Peter Schwartz is one of the OG futurists. His resume includes not only the legendary forecasts by Shell International that launched foresight as a business discipline, but also consulting on the 1983 techno-thriller film, “WarGames.” Now at Salesforce, he’s contemplating how artificial intelligence will shape the workforce of the future. He’s (mostly) positive and thinks the biggest changes will be in the reduction of the friction of everyday life, both at work and at home.

85%

of employed Americans think AI transcriptions or meeting summaries would be helpful in their jobs.

(Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)



That idea of friction is one Schwartz keeps coming back to, that AI can't solve all your work or home tasks, but it can make them *easier*. He sees this as a time-saver and a productivity boost. AI, he says, will act as an assistant helping with the day-to-day.

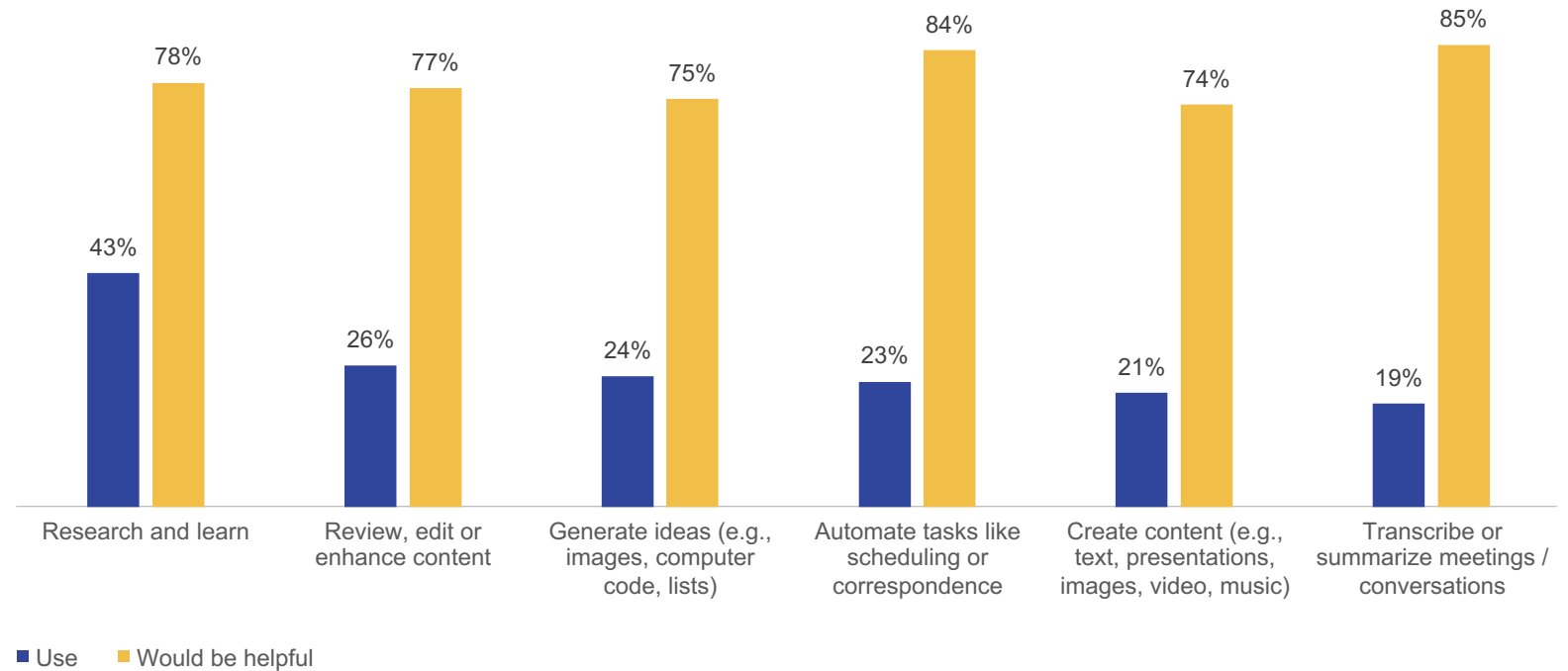
**“With AI, everybody has now gotten a smart research assistant, and soon they’ll have a smart executive assistant that takes the friction out of a lot of banal tasks. I am near the top of a large company. I have that help. But 99% of people don’t. Now they will. And when it works with people, it’ll make people more productive.”**

People hope they will find AI useful at work and home, but they also fear it’s coming for their jobs. This is a central tension of this issue.

[Read the full Q&A on page 55.](#)

## Workers have high hopes for AI assistance

Q. How often, if at all, do you use artificial intelligence (AI) to assist the following work or business-related tasks? (% Often/sometimes) / Q. How helpful, if at all, do you believe AI would be with the following work tasks? (% Helpful)



(Sources: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 277 U.S. adults who have used AI chat, image generation or assisted internet search programs; Ipsos survey conducted June 23-26, 2023, among 610 employed U.S. adults.)

Six tensions that will drive change:

# 1. The wonder and the worry of AI

All the tensions in this issue of What the Future really flow from this one. Will we be comfortable living in the AI Age, enjoying all the potential new conveniences, safer roads, productivity and creativity that AI tools promise? Or will we become mired in fear if AI leads to job losses, economic and power shifts and more rapid change? The answers lie partially in how the media spins these changes and partially in how these tools are developed. As Meta’s Nicole Alexander says, “AI’s impact on society underscores the critical need for accuracy and transparency in its development, deployment and usage. As AI systems become increasingly integrated into various aspects of our lives, it is essential to prioritize these two principles to mitigate potential risks and ensure positive outcomes.”

Worry trumps wonder by a 2-1 ratio

The possibilities that AI presents fill me with wonder

36%

64%

The possibilities that AI presents fill me with worry

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)

## Six tensions that will drive change:

# 2. Is AI coming for our jobs or making them easier?

When you think about the worries about artificial intelligence, jobs rank among the most primal and immediate. We're already seeing headlines about job loss. Perhaps that's true in the short term. But as Cisco's Annie Hardy and Salesforce's Peter Schwartz both point out, we've seen labor disruptions, and they have always led to more jobs, not fewer. "I don't think AI's going to take a lot of jobs. I think that the fear there is exaggerated," says Peter Schwartz. "I think it will enhance many jobs." There's another recurring theme, that AI will be our co-pilot in work and home tasks. But keep an eye on this tension. It feels like it could be bouncy instead of linear in the next several years.

### More people are optimistic than not on how AI will affect their work

AI will help make my job easier

57%

43%

AI will threaten my job

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos survey conducted June 23-26, 2023, among 610 employed U.S. adults.)



Six tensions that will drive change:

# 3. Do we trust AI developers or not?

Trust is a recurring theme in this issue. There are concerns about software, like generative AI tools hallucinating bad data or creating images of people with too many fingers. There are issues with users, like disinformation specialists creating fake news images and passing them off as real events. And AI technologies in many realms are being deployed with a lack of transparency about its data sources or training. This tension will likely persist until these problems get sorted or regulated. Blackrock Neurotech, by nature of its work in brain-computer interfaces, prioritizes being trusted by its patients every day. But Blackrock’s Taryn Southern knows that won’t be easy and will be challenging for some developers. “These are not questions that are going to work themselves out overnight,” she says. “A lot of it also depends on how society integrates with the technology.”

## People overwhelmingly distrust AI developers

I trust the groups and companies developing AI systems to do so responsibly



I don't trust the groups and companies developing AI systems to do so responsibly

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos Knowledge Panel survey conducted June 16-18, 2023, among 1,023 U.S. adults.)

## Six tensions that will drive change:

# 4. Will AI be developed and deployed equitably?

There is no shortage of research about the various biases in artificial intelligence today. People aren't confident that will get better. But it's early. Developers and the markets that influence them must make it a priority. Cisco's Annie Hardy is bullish that AI bias can be reduced — if stakeholders adopt an ethos of responsible AI. "There are technology solutions, social, relational, corporate solutions and enterprise approaches that we can take," she says. All of this comes down to building trust in AI and its uses. But, of course, we have to also make sure that AI is used and developed ethically. And that's a human problem as much as a technological one. So, keep an eye on this slider below.

### Most people fear AI will increase bias

AI will improve fairness and equality for more people

38%

62%

AI will increase bias against certain groups of people

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)

Six tensions that will drive change:

# 5. Will AI change society or just be one of many factors?

Will artificial intelligence be the main driver of social change? Or will we continue to be influenced by other technologies? The answer could lie in our reaction to these things. Ginny Badanes from Microsoft’s Democracy Forward says that when social media came on the scene people focused on its potential and likely downplayed some of the societal problems it has since caused. “I think we over-indexed on the wonder and didn’t spend enough time on the worry,” she says. With AI, however, she thinks we’re over-compensating. “We need to learn not to worry more, but to find that balance.” Given all the ways tech affects our lives today, it’s interesting to see that most people already recognize the transformative potential of AI.

**Most people believe AI’s impact on society will be dramatic**

AI is going to dramatically change American society

57%

43%

AI is going to be one type of technology among many

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)

## Six tensions that will drive change:

# 6. AI is making lives better ... or worse

Despite all our rising worries, we still think artificial intelligence is making things better today. That's where Adobe's Chris Duffey thinks we'll net out in the future. "I tend to gravitate toward more of a protopian narrative where technology is introducing incremental change to our lives," he says. "If you look back across all these introductions of new technologies, that's where the true pattern is." So far, AI is mostly being used behind the scenes in our daily lives, so it's fair to wonder who the 45% of people are who feel they are being negatively affected by it already. As we move forward, where we wind up on this tension line will matter, as will exactly who is saying life is better and who is saying life is worse.

### More often than not, people think AI is making life better

AI is making my life better today

55%

45%

AI is making my life worse today

Q. For each of the pairs of statements, please select the statement that comes closest to your view, even if neither statement is exactly right. (% Total)

(Source: Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)

# Plausible port one:



## AI redefines work and jobs

**In 2023, artificial intelligence started to be cited as a cause of job loss and layoffs. By 2033, the occupational landscape is remarkably changed.**

In this future, jobs shift but we mostly keep everyone working, just working differently and, some might argue, better. AI is our everywhere/everything assistant. Workers use AI tools in all facets of their jobs, everything from administrative and creative tasks to billing and accounting to legal review. Even physical jobs are increasingly done with AI-powered robots, drones and exoskeletons that help augment our abilities. Every worker gets superpowers. Productivity soars, as does burnout and mental health problems. Bosses expect everyone to be able to do everything. And they have AI monitoring tools to make sure workers really *are* doing everything.

One result of all this automation is that workers become more niche and subject-matter focused even as their actual jobs become more generalist. Many workers become a new sort of “full-stack” employee using AI tools to help with business functions ranging from design to coding. People have access to a wider variety of general skills. What becomes valued in this future is deep knowledge.

People with deep understanding of a topic can be generalists, but subject matter experts write better prompts and can more easily judge and fix the output of our AI tools.

# Waypoints

**Today, people see artificial intelligence as being a force of change at work, more than a threat to their jobs in this tension. But in the U.S. and around the world, people still think it's likely that AI could replace their jobs — in the next five years.**

Spend a moment in that perspective. Maybe you're thinking that your job is up for grabs. If not, imagine that it could be gone. Not just losing your job, like in a layoff, but losing your entire career. You can see how this specific worry is even more tangible than the [existential threat](#) to all human existence that AI developers have warned about. If this tension moves, it's going to be because of things happening in the present — headlines and anecdotes about friends and family getting laid off, for example. So, what does a future look like where more people are worried for their jobs (or have lost them) than are excited about how AI will make their jobs easier?



# Plausible port two:



## AI takes over the workforce

**Now imagine it's 2033 and artificial intelligence goes beyond augmenting and expanding what we can do, and instead starts cutting humans out of the workflow entirely. People look back on the actors and writers strikes of 2023 that demanded AI protections and realize: They had a good point.**

Early on, some experts and pundits suggested that AI would lead to a short-term job apocalypse, especially among white collar knowledge-sector jobs. Some futurists thought the answer would inevitably be Universal Basic Income (UBI), the idea that everyone essentially gets a base salary from the government or some other entity, which they can supplement.

In this future, one person plus AI can do the job of four people, or at least the bosses think so. As the knowledge sector loses jobs the service sector that supports it will also take a hit. New jobs and professions that are an outcome of an AI economy don't sprout up as quickly as old professions are replaced. We find that we can't reskill fast enough. Political brinkmanship in Washington continues to thwart any useful solutions or regulation. It's hard to imagine UBI coming into play without some serious upheaval.

Changing job dynamics exacerbate the gender dynamics that were in flux in the early part of the century as a growing share of young men feel threatened by all the disruption. Loss of trust in AI spills over from the workplace into further growing distrust of AI in all spheres, making progress fraught.

# Future Jobs to Be Done



Ipsos spins the traditional “Jobs to Be Done” framework forward with **future Jobs to Be Done (fJTBD)**. This builds on the theory that people buy products and services to fulfill certain needs or accomplish specific tasks. For example, we don’t buy a taxi ride; we hire one to get us where we want to go. We don’t buy body wash; we hire it to bathe and smell good.

To bring these jobs to be done into the future, we envision powerful and plausible scenarios through strategic foresight. While many needs are enduring and do not change over time, the context of a job will change along with the potential solutions and alternatives.

These scenarios help us define the circumstances in which we may find ourselves, such as our employers encouraging us to use generative artificial intelligence tools in our daily work. We use fJTBD to tie these scenarios to actions that organizations can take to help people meet future needs.

While it’s typical in foresight to create fJTBD clusters, we’re sharing one scenario here as an example.

*Trevor Sudano is a trends and foresight lead at Ipsos Strategy3.*

## Help me protect my skillset from the advancement of AI

**In a world where humans have to compete with AI, the skills we use to differentiate ourselves and the opportunities available to us, will be different.**

Potential fJTBD:

- Help me understand which human skills are in the highest demand
- Help me learn new skills and advance my credentials
- Help me identify job opportunities for human-based intelligence

Imagine a world where ... online courses are focused on skills that are most likely to land you in a job where AI has begun to take over some of the tasks.



# Future optimism gaps

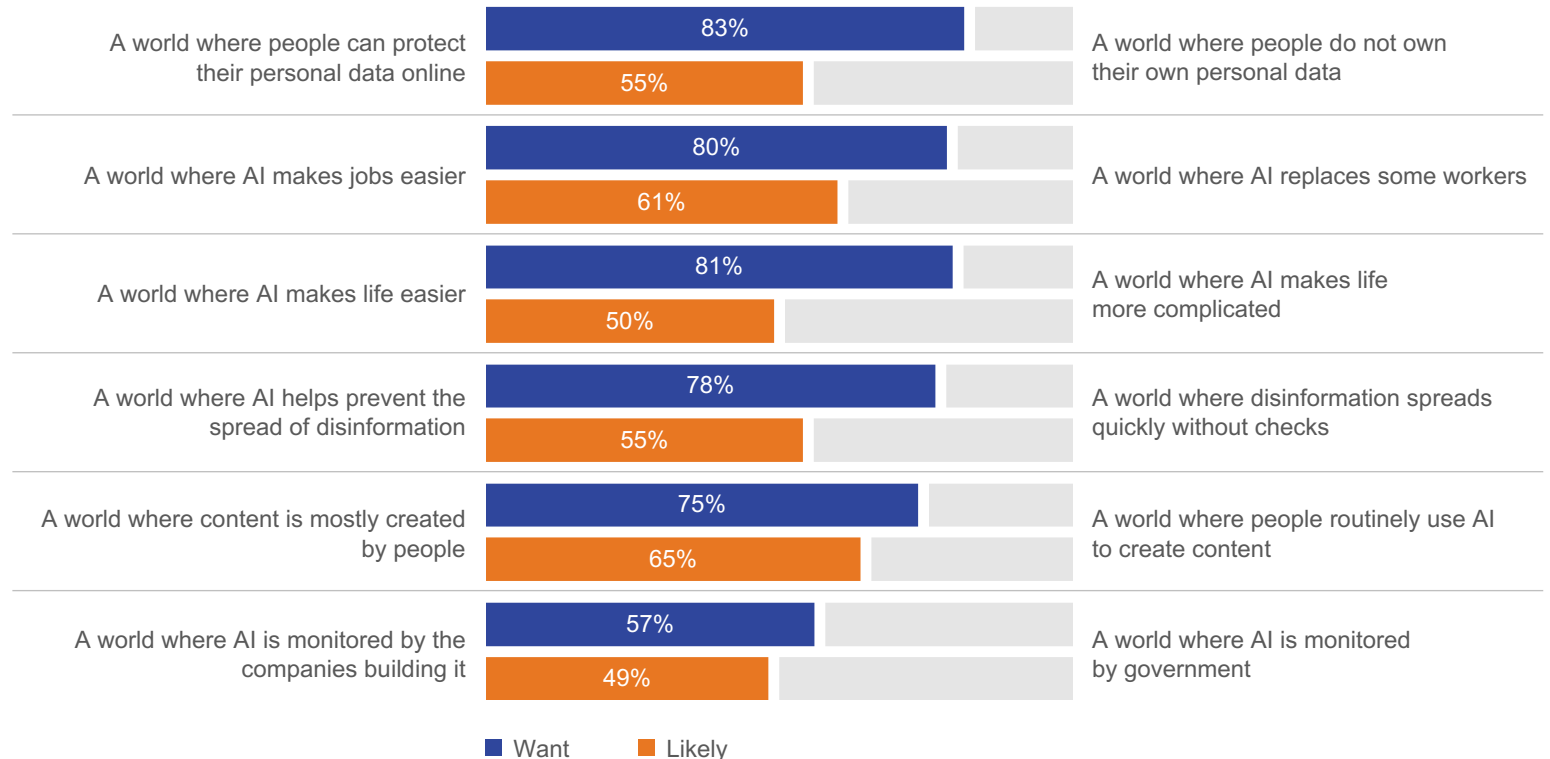
**People have high hopes that AI will make their lives better and safer. Yet we're less optimistic that will happen. When it comes to work, 80% of people want AI to make jobs easier. Yet 61% expect AI to replace some workers.**

On the subject of AI, people overwhelmingly agree that they want it to be a solution for better work and life and creativity. But they're far less sure of who should regulate it, between its builders and government.

This is one area where most of the executives we interviewed agree: Brands and policymakers along with people should play a part. Survey respondents lean toward wanting the developers to be responsible for monitoring AI, yet we're split on whether that will happen.

The future we want vs. the future we want less

Q. For each of the following future scenarios, select the one that [you most want/seems most likely] to happen. Please select the one that comes closest to your view, even if neither statement is exactly right.



(Ipsos survey conducted June 23-26, 2023, among 1,120 U.S. adults.)

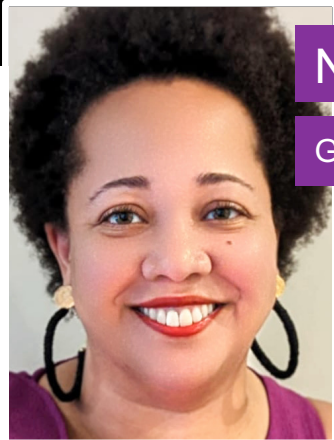
# Appendix

In this section,  
we show our work  
and our workers

1. Full Q&As
2. Signals
3. Contributors



# How tech will drive AI's growth by solving for human values



Nicole Alexander

Global head of marketing, Meta; professor of marketing and technology, New York University

**Artificial intelligence has the potential to change every aspect of how people live. The question is whether those changes are helpful or harmful. What, if anything, should we do now to maximize AI's benefits and reduce its risks? Nicole Alexander has been tackling these questions as global head of marketing at Meta and as a professor of marketing and technology at New York University. She believes that making smart decisions about AI now could make its potential better for all of us in the future.**

## Kate MacArthur: How can AI improve society?

Nicole Alexander: If you think about the past 10 years, we didn't have facial-recognition applications, which afford efficiency. We didn't have smart homes. Think of things like personal shopping or streaming apps. There are so many improvements to our day-to-day lives based on AI and the convenience that it affords, not to even talk about the advancements in biotech and medicines to help everything from Alzheimer's disease to the future of cancer research. Because AI seeps into society in such a fast and under-the-radar way, it changes our expectations where we don't necessarily think of it as AI, we just think of it as the net new.

## MacArthur: I would probably be much healthier if I didn't have to meal plan and shop and think about what I need in my pantry. Could I get there with AI?

Alexander: There can be an entire understanding of not just what you want to consume, but is what you want to

consume the right diet for you? We track things like our heart rate, our blood pressure, all this preemptive information. Then AI feeds them into other areas such as convenience, preventative measures as granular as where you live, if you have preexisting conditions, etc. Having systems in place that can collect massive data more than you and I could ever do manually, and then make recommendations on how to optimize your life provides not only convenience but also longevity and healthiness.

## MacArthur: Is there anybody whose life won't be affected by AI?

Alexander: AI's impact on society underscores the critical need for accuracy and transparency in its development, deployment and usage. As AI systems become increasingly integrated into various aspects of our lives, it is essential to prioritize these two principles to mitigate potential risks and ensure positive outcomes.

**MacArthur: How can you make people know that they're being affected by AI?**

Alexander: It's so hard to show all the areas that AI affects. So, there's a level when transparency is needed versus when it isn't needed. You don't need to know about the logistics of transportation models in Chicago, for instance. We just know that it's working. If I got declined from a bank loan, [the bank] should say, "We have a system that looks at these 17 factors. This is where you score negatively and positively across these factors and your total score, with two points shy of being able to qualify for said loan." That gives me transparency. It's the transparency *not of* the AI, but the transparency *of how* the AI was applied.

**MacArthur: How could AI be used positively for something like loneliness?**

Alexander: If we can get AI to contextualize, to decipher what human emotions are and what appropriate responses are to those human emotions from a data set, then we get closer to answering the question, "How does AI provide the level of trillions of responses and subtleties around an emotional need?" But the level of advancement in the myriad responses that would need to be developed, we're not there yet unfortunately.

**MacArthur: We've already seen AI care companions like ElliQ which we featured in our [Aging](#) issue, be used for elderly communities.**

Alexander: If we think about real comfort for those that are lonely, they are in elderly communities. Those are the areas where we really see a huge benefit and will immediately benefit those that are most in need. And it's not necessarily a robot. It could be an app that hopefully helps anxiety or is helpful if someone has ongoing depression.

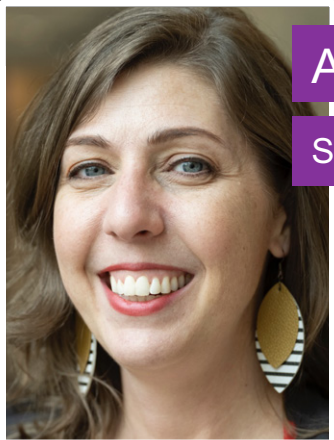
**MacArthur: How does AI affect humanity and at what point are we messing with that?**

Alexander: We've already started. AI, if it's used well, is a time capsule that can give multiple perspectives and dimensions of how people felt at any given point in time. But if manipulated, you can eliminate an entire society, race or culture of individuals in their history. We have to be very careful when we think about how much we rely, leverage, and become the subjects of AI as we move forward with much more advanced and massive models that will affect everyone.

*Kate MacArthur is managing editor of What the Future.*

***"It's the transparency *not of* the AI, but the transparency *of how* the AI was applied."***

# How we can build needed trust in AI through equity



Annie Hardy

Senior visioneer, Cisco Systems

**As a futurist for Cisco Systems, Annie Hardy's work is focused on the future of trust, the internet, expertise and work. When she thinks about artificial intelligence, she sees trust as a core issue. How do we build trust with each other? How do we build trust with customers? How do we build trust in a world where we can't believe what we see or hear. The answer is tricky, and the stakes couldn't be higher.**

**Matt Carmichael: When you think about the future, how is it different for a business-to-business (B2B) versus a business-to-consumer (B2C) company?**

Annie Hardy: When I think of a B2B company versus a B2C company, the first thing I think of is the future of trust because of the way the consumer relationships and loyalty have shifted over many years. For instance, if we look back to 2008, 2009, when blockchain was created, that was a reaction to the problem of trust, that financial institutions were no longer trusted institutions.

**Carmichael: How else does trust affect the market?**

Hardy: Companies are now stepping in with their political values across both ends of the spectrum. You have companies that are very progressive and companies that stand for conservative ideals. With B2C products, it can be very personal. With B2B, it's more institutional. Risk has a lot to do with the trust imperative for a B2B company versus a B2C company.

Generation Z considers the ESG [environmental, social, governance] values of a company as they're considering a job and will decline a job offer if they don't believe that the values and the mission of the company align with theirs. Business-to-human values are really going to be a critical component in whether somebody trusts a company.

**Carmichael: There are cloud-based vs. device-based AI solutions. How does that affect privacy and security?**

Hardy: The question of the regulations around any kind of technology depends on where you live. A great example would be GDPR in the EU or regulations like HIPAA in the U.S. protecting health information. What we see in the U.S. is highly regulated industries being regulated because the risk is high versus in the European Union [where] you have governments protecting *people*. Regulation for things like cloud-based computing or AI are going to align with the values of the culture.

**Carmichael: What are the ethical risks of AI?**

Hardy: When we look at companies doing responsible innovation and responsible AI, this is an ethos. It goes back to trust. Then you have, “We’re going to move fast, we’re going to lead the way, we’re going to bring innovation to people.” That’s a different ethos. That’s the way technology has always been.

**Carmichael: That sounds like two very different futures.**

Hardy: Yes, it’s contingent on the adoption of a specific ethos. If we adopt responsible AI, then we’re going to start talking about UBI [universal basic income] versus if we adopt innovation, what we’re going to see is the rise of agrarian societies because people can’t afford to live in cities. These are alternative futures contingent on what ethos is established and what trust looks like as a result.

**Carmichael: What if we don’t build trust?**

Hardy: What is the “prepper” equivalent of an anti-AI society? My concern is that we’re not going to be able to upskill in time. Everybody says AI’s going to take jobs away. In every other industrial revolution, more jobs were created than were lost. Part of this is fear out of a lack of understanding, which is very natural given how complex AI is.

**Carmichael: What if people’s fear grows, or jobs disappear, and we don’t get UBI?**

Hardy: We’ll see the growth of personal agriculture and societies that are based on agriculture rather than technology. People are going to go off-grid and become more self-sufficient. The cost of living in cities is pushing people out. Urban decentralization is already happening. All of that is a trust thing. People are just going to want to extract themselves from the system.

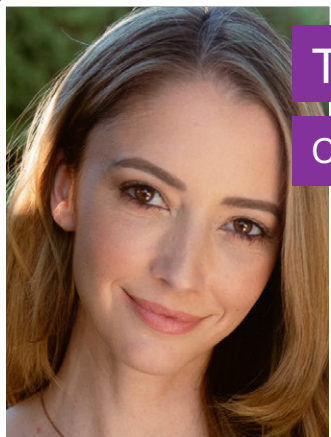
**Carmichael: One way to reduce fear and build trust is to have more voices in the rooms where AIs are created. We know that. How do we do that?**

Hardy: There are a lot of different things that are going to have to play into solving the bias and data problem. There are technology solutions, social, relational, corporate solutions and enterprise approaches that we can take. If we’re going to fill the pipeline with voices that are distinctive, we have to figure out what it looks like to fairly hire and train and what diversity actually looks like. The beauty is that with the rise of the low-code, no-code movement we can get people who aren’t necessarily experts at math to be a part of the data science or the artificial intelligence pipeline.

*Matt Carmichael is editor of What the Future and head of the Ipsos Trends & Foresight Lab.*

**“If we’re going to fill the pipeline with voices that are distinctive, we have to figure out what it looks like to fairly hire and train and what diversity actually looks like.”**

# Why ethics should be at the center of new AI tech



Taryn Southern

Chief storytelling officer, Blackrock Neurotech

**It's hard to tie Taryn Southern to one job — or even one career. She's a former "American Idol" semi-finalist, a YouTube star and creator of the first pop album composed with artificial intelligence. She's now helping explain one of the most complicated technologies in the world, brain-computer interfaces developed by Blackrock Neurotech. These experimental tools are helping people who have neuro-degenerative conditions regain some lost functions. She has a "front seat to the future," she says. Here's what she sees from that view.**

**Matt Carmichael: Where do you see brain-computer interfaces (BCI) going in the future?**

Taryn Southern: Our hope is that people with paralysis or other neurological disorders can restore function through these devices. And that it's as easy as going to their doctor and saying, "I want to have this surgery," and it is reimbursed by insurance. They can take the device home and use it for eating or cooking or making art with the interface. I hope it's a normal, commonplace thing for people to be treating these diseases through electrical means with BCI versus pharmaceutical means.

**Carmichael: There are a lot of scary narratives in pop culture about BCI being used to control people. How do you combat that as a storyteller?**

Southern: First, there's a misunderstanding around how the technology works and how it interfaces with the brain. So, one area of my storytelling is clearing that up. We're not reading people's thoughts. That's just not possible, at least in the current form of BCI. We are

listening to a cluster of neurons out of 80 billion neurons, and we're running that through machine learning algorithms to study one very specific thing: movement intention. The other part is highlighting the very human-centric ways that this technology is improving lives and showing the real people that are using this technology.

**Carmichael: At some point will we see this technology used more generally to augment skill sets rather than treat disorders?**

Southern: Theoretically, the technology has demonstrated feats that I think make it very plausible that humans could one day use these devices to augment their abilities. Augmentation is in the eye of the beholder. In Hollywood storytelling, people think about limitless productivity or enhanced memory. But one of the more interesting use cases of our technology now is the ability to provide sensation to people who've lost their sense of touch. It's sort of an odd thing to consider in terms of augmentation, but we might end up with additional senses that we didn't have before.

**Carmichael: How do ethics fit into the AI discussion?**

Southern: I'm not an ethicist, nor am I a philosopher. I was working in generative AI in 2016, and I saw how cool the possibilities of these technologies were. But I never guessed in a million years the capabilities that it would have in 2023. We're forced to have ethics conversations really quickly. It's critical that those are not just conversations, but that they're built into the ethos of the technology.

**Carmichael: So how do ethics fit into the neuroscience?**

Southern: It's the exact same thing. We just haven't hit anything close to a critical mass. We're talking about several dozen patients who are in very isolated, very controlled research studies. Ethics is the No. 1 component of constructing these studies. These are not yet available to the public. We're at an advantage right now because we can have these conversations before anything has been unleashed. We've had the learnings of several dozen patients in many different institutions to say, "What are the things that we've learned over 20 years of research?"

**Carmichael: What are some of the things your ethics board considers and discusses?**

Southern: It's imperative that ethics are the foundational layer on top of which everything else is built. You have to

learn how to ask the right ethics questions. There are certain ethical questions like privacy and security that are obvious. Then there are others that don't become apparent until you're in human trials and you're in their home and you're getting that feedback. In some ways that because BCI has been slow in comparison to other industries like AI we've had time to really approach it in a responsible manner. These are not questions that are going to work themselves out overnight. A lot of it also depends on how society integrates with the technology.

**Carmichael: What can the AI community learn from neuroscience?**

Southern: The lesson for generative AI is there are ways we can be testing these technologies with very small, limited populations to ensure that the engineers are asking the right questions in all the different areas that touch human lives.

**Carmichael: On a scale from one to 10, with 10 being super freaked out and one being really hopeful about everything, where are you falling with AI today?**

Southern: Can I exist in a very paradoxical view of being equally terrified and excited? I think I'm a nine on both sides.

*Matt Carmichael is editor of What the Future and head of the Ipsos Trends & Foresight Lab.*

**“These are not questions that are going to work themselves out overnight. A lot of it also depends on how society integrates with the technology.”**



# Why humans *plus* AI are key to revolutionizing healthcare



Kyu Rhee, M.D.

Senior scholar, Stanford School of Medicine

**In the five years since What the Future first interviewed Dr. Kyu Rhee on the impact of artificial intelligence in healthcare, the technology has boomed. In that time, Dr. Rhee has moved from chief health officer at IBM to chief medical officer at CVS Health. In mid-August, he'll join the National Association of Community Health Centers (NACHC) as its president and CEO. Over time, his views on AI have become only firmer: Humans plus AI are key to making healthcare more efficient, effective and equitable and a better experience.**

**Kate MacArthur: When you spoke with What the Future in 2018, you discussed how AI could remove some administrative burden for doctors and that patients needed to trust doctors to protect their data. How is that compromise evolving?**

Dr. Kyu Rhee: I still believe the core of healthcare is a patient and a provider. Then the responsibility of AI is how it supports that relationship. I also believe the providers who don't use AI will be replaced by those who do, and that is slowly happening.

**MacArthur: Where do you see AI having the greatest impact in healthcare in the next decade?**

Dr. Rhee: I'm going to go from what I call follow the data — and even the money — in healthcare. Start with the patient. There are opportunities where algorithms can nudge patients to the best healthy behaviors, and it's still the patient's decision. Then you go to the provider. Two key areas where AI can be leveraged effectively

is transitioning their role as a data entry clerk. We know half of each visit is spent entering data into an EMR [electronic medical record] to document that visit.

The hope is an AI digital scribe will reduce that time significantly. We spend a lot of time on administrative burdens like prior authorization for either drugs or procedures. The future of AI-supported prior authorization would allow immediate approval before you leave that exam room.

**MacArthur: How do you make sure that people aren't being rejected for care because the AI was trained poorly?**

Dr. Rhee: You have to be transparent about the biases associated with the datasets you're using, and you have to do your best to ameliorate or reduce those biases. My personal belief is you can never eliminate bias in data completely.

**MacArthur: As a doctor and AI expert, how does the risk of catastrophe from AI rank against societal-scale risks, such as pandemics and nuclear war?**

Dr. Rhee: I don't think, as some have stated, that AI inevitably will lead to the destruction of our health system or anything like that. Now what I do worry about is if we start to trust the AI more than we trust the humans. Healthcare is all about trust in human-to-human relationships. AI should support that.

**MacArthur: How so?**

Dr. Rhee: I saw this in certain cases where a patient might say, "Wait, what is the AI algorithm saying? That's what I want." And the provider's saying, "I don't agree with the AI algorithm. I have a lot of experience. I think it helps me, but ultimately this is what I recommend." As a provider, I can tell you why I'm ultimately accountable. Ultimately, that's an opinion. That's something I believe patients should have access to.

**MacArthur: So, what's the solution?**

Dr. Rhee: As we create more AI and data literacy, part of building trust with the patient is creating complete transparency. You're the ultimate payer of our health system. You should see the outcomes of what you paid for, including the data that's produced and the insights that are created.

**MacArthur: Some people believe AI can eventually be smarter than we are. Are you in that camp?**

Dr. Rhee: It depends on what you define as smart. It can know from an IQ perspective certain things, but to me healthcare is so much more than just IQ, it's about EQ [emotional intelligence]. It's about SQ, social intelligence. The AI algorithm will only know what it's taught, and there's so much that's not teachable in data, and there's so much that's not in the data. The combination of human *plus* AI will be better than just humans only. I don't think it's as transparent to most people as it should be, but as that transparency becomes more visible, I think there will not be a provider who doesn't use AI.

**MacArthur: How should AI be built to be more helpful for healthcare?**

Dr. Rhee: Your workforce should represent the people you serve in healthcare and in health technology. We have not done a good job of female and minority representation. My call to action is that people should have better representation whether it comes to data scientists or the C-suite in healthcare and health tech companies.

*Kate MacArthur is managing editor of What the Future.*

**“I still believe the core of healthcare is a patient and a provider. Then the responsibility of AI is how it supports that relationship.”**

# How AI will help people be more creative



Chris Duffey

Author; strategic development, Creative Cloud, Adobe

**The explosion of artificial intelligence developments, specifically generative AI, has created hope and fear for people, especially creatives, on how it could affect their work and their livelihoods. Chris Duffey, strategic development for Adobe Creative Cloud at Adobe, thinks professions of all kinds will benefit from viewing AI as a co-pilot. A strategic futurist, Duffey speaks from experience. He credits AI as his co-author for his 2019 book “Superhuman Innovation” on how AI could revolutionize business.**

**Kate MacArthur: AI is trained on human-generated content. What happens when it starts getting trained on AI-generated derivatives?**

Chris Duffey: I tend to gravitate toward more of a protopian narrative where technology is introducing incremental change to our lives. If you look back across all these introductions of new technologies, that’s where the true pattern is.

**MacArthur: Is AI improving human creativity or replacing human creativity?**

Duffey: I believe with 100% certainty we’re entering the Golden Age of creativity. That’s where AI excels and can really speed up things to allow what people do best. We do critical thinking. We do higher-level problem-solving.

**MacArthur: How do you see this tension between AI creating or replacing creative jobs playing out?**

Duffey: I would encourage others to think of generative AI as another tool within a creator’s tool belt to solve business problems and solutions. We’ll see an evolution of the nature of jobs with this ability to free up time for greater innovation.

**MacArthur: What are the ethical considerations for how tech companies should be considering this?**

Duffey: You referenced what happens when the AI system is training off an image that’s been previously generated. At Adobe, our system only trains off originally sourced images. So, there won’t be that complication from our standpoint. Another aspect is when does an image become a new image? We’re at this inflection point where everyone has the true power to help shape the future as they would like to see it.

**MacArthur: Let's talk for a second about the [Supreme Court case](#) over the Andy Warhol painting of Prince. What would a roadmap look like for how to manage intellectual property issues that AI tools can create?**

Duffey: I've started looking into some historical cases on music licensing which can be a source of where things are going for when is something IP-ownable and when is something potentially inspired by, but not similar. That gets into quite complex legalities and agreement on what those are. It gets infinitely more complex when you talk about arts in IP. We're entering this new era of rights management, and some argue "left management." Some are advocating we're potentially, at some point, moving into a left-managed system, where there's this acknowledgement that when you put out content, it might be referenced in some ways going forward.

**MacArthur: How do businesses need to think to keep AI from becoming a disinformation nightmare?**

Duffey: The presence of traceability within a ledger enables you to identify the origin of content, thus establishing its credibility. So, it becomes possible to determine whether the content has been manipulated. By effectively identifying and verifying this data, you can achieve a significant reduction in the dissemination of misinformation, thereby fostering a more informed future.

**MacArthur: As the ability improves for people to manipulate, expand on or riff off content, what will brands need to understand to use AI ethically?**

Duffey: I recently authored a book titled "Decoding the Metaverse," which explores the concept of the metaverse as an organic progression towards a more immersive and engaging experience. Simultaneously, this is where businesses can begin to embrace some of the foundational principles of Web3. These include co-ownership and co-monetization, which enable the creation of fandom, the establishment of co-monetization models, and ultimately drive an innovative and thriving creator economy. Consequently, I posit that AI will be instrumental in realizing this visionary future for businesses.

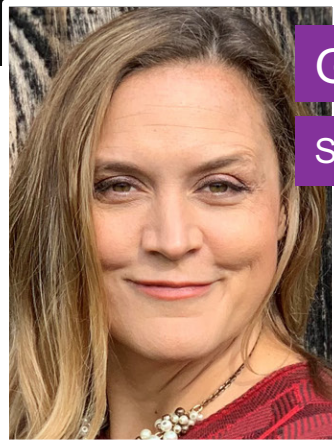
**MacArthur: How do those conversations get built so that there's a level of fairness, recognizing who's the pilot and who's the co-pilot?**

Duffey: That's a foundational question that will probably get defined by the platform. This is where I truly believe the creators have greater influence, greater leverage than ever before because of brands that understand that they need to leverage their community even more. That will be an evolution as we go.

*Kate MacArthur is managing editor of What the Future.*

**"I believe with 100% certainty we're entering the Golden Age of creativity. That's where AI excels and can really speed up things to allow what people do best. We do critical thinking. We do higher-level problem-solving."**

# What it will take to help people trust AI for democracy



Ginny Badanes

Senior director, Microsoft Democracy Forward

**One question that gets asked a lot is “Can’t we use AI to fight disinformation rather than just create it?” And, of course, the answer is yes. Ginny Badanes leads a program at Microsoft called Democracy Forward. It’s working to use technology to protect democratic institutions like elections campaigns, promote civic engagement and defend against disinformation. Like Cisco’s Annie Hardy, Badanes thinks a lack of trust in institutions is a key issue plaguing us today — and could get worse in the future.**

**Matt Carmichael: Deepfake tech is impacting not just elections but all kinds of industries. Are we entering an online security arms race?**

Ginny Badanes: Industry researchers who were working on this really found that you can’t ever get to a point of reliability with deepfake detection because the technology is getting so much better so quickly. We should be moving toward more labeling, which is a broad term. On one hand we’re talking about labeling of authentic material, and then on the other we’re talking about labeling of synthetically-created material.

**Carmichael: Why are people so willing to believe disinformation in the first place?**

Badanes: Everything starts from the loss of trust. We’re already in an environment where even without AI-generated imagery or content, people have lost their

trust in what they can see. We’ve really been focused on how can you give people more information about the publisher or the site that they’re reading that allows them to make their own determinations and decisions about what they’re reading or consuming. In giving more information to readers, in theory, they should be able to develop trust on their own terms and not feel like they’re being told what to trust and not trust.

**Carmichael: But then there’s the behavioral science problem of how we trust the things that we believe to be true anyway.**

Badanes: That’s why this disinformation cycle is just so strong because people are inclined to believe something that they already believe. That’s really where we need to hold the publishers of this information to account. There’s nothing wrong with opinion journalism, but let’s just be clear that it’s an opinion versus a fact.

**Carmichael: How do we balance the responsibility between creators and believers of disinformation?**

Badanes: It's a shared responsibility. I've been thinking through this disinformation challenge in terms of the intervention points to get us to a place where there will still be murky information in the environment, but it's manageable. If we look back at spam, there was a point where it proliferated. People were sending money to "Nigerian princes." It was overwhelming inboxes. Now spam still exists but in a manageable way.

**Carmichael: How did we get there?**

Badanes: There was regulation put in place that said these certain behaviors are not acceptable. There were tech solutions, too. The tech companies figured out a way to decipher between the different kinds of emails that were coming in and probably used AI to determine the likelihood that something was authentic or not.

But there's a consumer responsibility too. I have a responsibility as a receiver of emails to think twice and use some thought before opening an email or an attachment. I didn't do that on my own. I was taught that.

**Carmichael: Where does the responsibility lie in terms of solutions?**

Badanes: I think it's a similar practice when it comes to disinformation defense and getting us to a place where it's manageable. There are government responsibilities, technology company responsibilities, civil society responsibilities and responsibilities on employers training their employees. Then there is the consumer side where we should be more critical consumers of information.

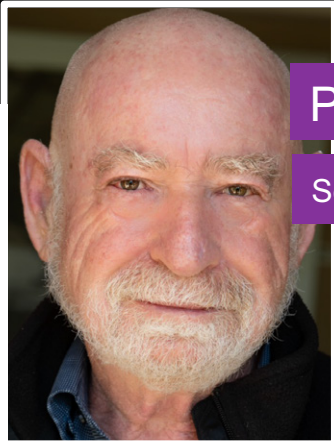
**Carmichael: How do we balance people's wonder and worry when it comes to AI?**

Badanes: I've been reflecting lately on the difference between this moment and when social media first came on the scene. We were looking at how great social media was going to be, particularly in our space of democracy. I think we over-indexed on the wonder and didn't spend enough time on the worry. But I think people are saying, "I'm not going to make that same mistake again, so I'm going to over-index on the worry without really spending the time considering the wonder." We need to learn not to worry more, but to find that balance. Let's also consider what are not just the short-term concerns we have — of which I recognize there are many — but what are these longer-term concerns? It's not too late for us to be able to figure them out and put guardrails in place.

*Matt Carmichael is editor of What the Future and head of the Ipsos Trends & Foresight Lab.*

**“If we look back at spam, there was a point where it proliferated. People were sending money to ‘Nigerian princes.’ It was overwhelming inboxes. But we’ve gotten to a place where spam still exists but in a very manageable way.”**

# How AI can reduce the friction in work and life



Peter Schwartz

Senior vice president of strategic planning, Salesforce

**Peter Schwartz is one of the OG futurists. His resume includes not only the legendary forecasts by Shell International that launched foresight as a business discipline, but also consulting on the 1983 techno-thriller film, “WarGames.” Now at Salesforce, he’s contemplating how artificial intelligence will shape the workforce of the future. He’s (mostly) positive and thinks the biggest changes will be in the reduction of the friction of everyday life, both at work and at home.**

**Matt Carmichael: AI experts and developers are sounding alarms about the tech they are building. Is that helpful?**

Peter Schwartz: There’s a famous book by Herman Khan called “On Thermonuclear War.” It served a very useful function. It got people to think seriously about it, and it was one of the contributors to arms control. It’s one thing to have a pessimistic scenario about a bad business outcome. It’s a very different thing to have a pessimistic scenario about the end of humanity. They’re not really planning scenarios. They’re warnings and play a very different kind of function.

**Carmichael: How has the nature of work changed over the years?**

Schwartz: It depends on where you are in the world. More work is knowledge-intensive and people-intensive and relationship-intensive as opposed to physically intensive. Just as 80% of people once worked producing

food for everybody, now it’s 2%. Or manufacturing was 65% and that’s now down to 15% or 20%. That’s a huge change, and as a result, the technologies that affect individuals and what they do have been hyper-consequential.

**Carmichael: How will AI evolve that?**

Schwartz: If you went to a bank in the 1950s and went to the back room, you would find a room full of women typing bank statements. Because if you wanted your bank account statement, a woman sat at a desk and typed it. When mainframe computers were introduced, all those jobs of those women went away. We don’t miss them for a moment. What happened to the jobs and the women? One, they did other jobs in the banks like bank tellers because the banks grew. They made more money. They became executives in the bank. The other thing is that the economy grew. [Women] got other jobs as the service economy grew. That’s what keeps happening. We’re in one of those moments.

**Carmichael: People are concerned that AI is coming for their jobs. But it's going to create jobs, too, right?**

Schwartz: I don't think AI's going to take a lot of jobs. I think that the fear there is exaggerated. I think it will enhance many jobs. Basically, everybody's now gotten a smart research assistant, and soon they'll have a smart executive assistant as well, that takes the friction out of a lot of banal tasks.

**Carmichael: How do we train workers for new jobs?**

Schwartz: One of the great, cool things we have is AI teaching tools. It won't just be for training the workforce. Every kid will have a personal tutor that will be able to go along with them. The first versions already exist.

**Carmichael: And how will AI impact business-to-business differently from business-to-consumer?**

Schwartz: Say I want to sell you something. I have to go back to the finance and legal departments and get back to you next week with our proposal. My AI sales assistant will be listening to that conversation, and by the time you and I have finished our conversation, all the paperwork is ready for you to sign and agree on. The friction disappears. Is this earth shattering? No, but it's much more productive.

**Carmichael: How will AI affect an aging workforce?**

Schwartz: It will be transformative. I have friends in my age group [septuagenarians] who would just as soon not get on an airplane but now can collaborate and work with others in ways that they couldn't before. And we're going to see AI-enhanced tools that deal with human infirmities. Think about the Apple headset that was just introduced. But now take a much more modest version for a person with macular degeneration that adds an AI doing real-time analysis of the inbound data and compensates for the loss of vision directly to the brain.

**Carmichael: How is AI helping you today?**

Schwartz: I've been an information hunter for 50 years and I'm pretty good at it. But now I've got an unbelievable tool to help me do that and to do it faster, better and so on.

**Carmichael: You've talked a lot about the wonder of AI. What's your biggest worry?**

Schwartz: The most challenging and most problematic is false information. Not "hallucinations," but deliberate falsifications.

*Matt Carmichael is editor of What the Future and head of the Ipsos Trends & Foresight Lab.*

**“I don't think AI's going to take a lot of jobs. I think that the fear there is exaggerated. I think it will enhance many jobs.”**



# Signals

What we're reading today that has us thinking about tomorrow

**OpenAI suggests voluntary AI standards, not government mandates, to ensure AI safety** via [Fox News](#). Lawyer for ChatGPT creator OpenAI says AI companies should set safety standards, rather than rely on government rules.

**Why big food is looking to AI to shape the future of food** via [Forbes](#). The world's biggest food companies are partnering with AI startups to boost innovation and sustainability beyond their own capabilities.

**A hiring law blazes a path for AI regulation** via [The New York Times](#). New York City has taken the lead in AI regulation by passing a law that requires companies to notify job candidates if automated AI systems are being used in the hiring process.

**"Thousands of dollars for something I didn't do"** via [The New York Times](#). Randal Quran Reid was jailed after being falsely accused of stealing purses in a state he'd never visited, due to poor facial recognition and other hidden technology.

**AI is dreaming up drugs that no one has ever seen. Now we've got to see if they work** via [MIT Technology Review](#). Drug developers are using AI to discover drugs faster and more cheaply than the usual decade and billions of dollars that are required. While it could be years before the first drugs designed with AI enter the market, AI is shaking up the pharma industry.

**Ipsos Top Topics: Artificial Intelligence** via [Ipsos](#). Find our latest charts and data on AI (and what you need to know about it) on this consistently updated webpage.

**Americans hold mixed opinions about AI and fear its potential to disrupt society, drive misinformation** via [Ipsos](#). New Ipsos poll finds that roughly one in six Americans reports having used a generative AI program like Chat-GPT or DALL-E, but their enthusiasm is tempered by concerns about privacy and security.

**AI is making the world more nervous** via [Ipsos](#). On average across 31 countries, nearly as many adults say AI products make them nervous (52%) as say they are excited about them (54%), Ipsos finds.

**Conversations with AI: How generative AI and qualitative research will benefit each other** via [Ipsos](#). What role will generative AI tools play in market research — and vice versa? This Ipsos POV offers a close look at the potential applications.

**Ipsos Global Trends** via [Ipsos](#). Ipsos' groundbreaking survey of 48,000 people across 50 markets situates the world's views on AI within the context of other socioeconomic and cultural forces.

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