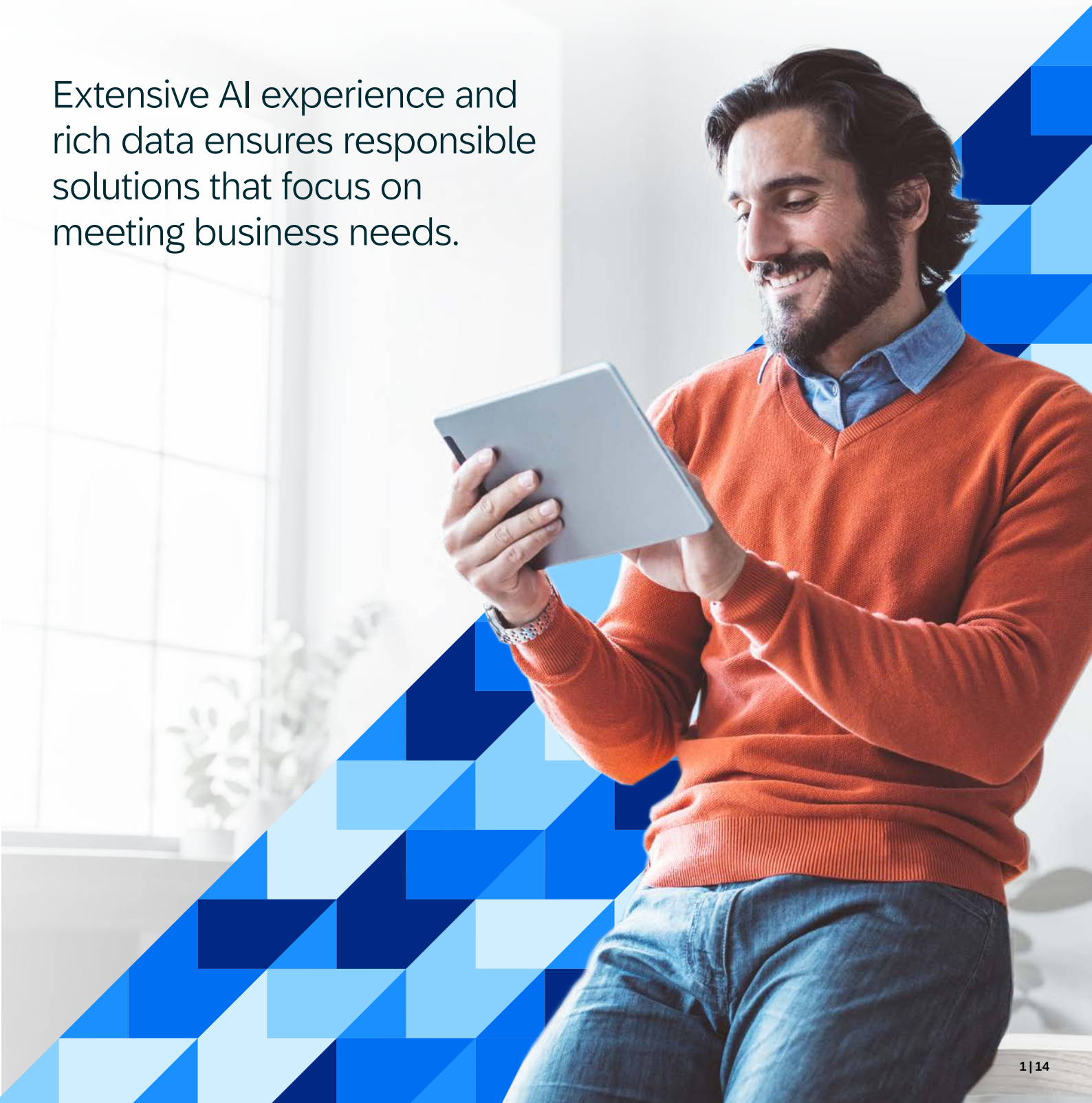
SAP Concur

# Artificial Intelligence, Real Solutions for Business

Extensive AI experience and rich data ensures responsible solutions that focus on meeting business needs.



# Contents

# Introduction

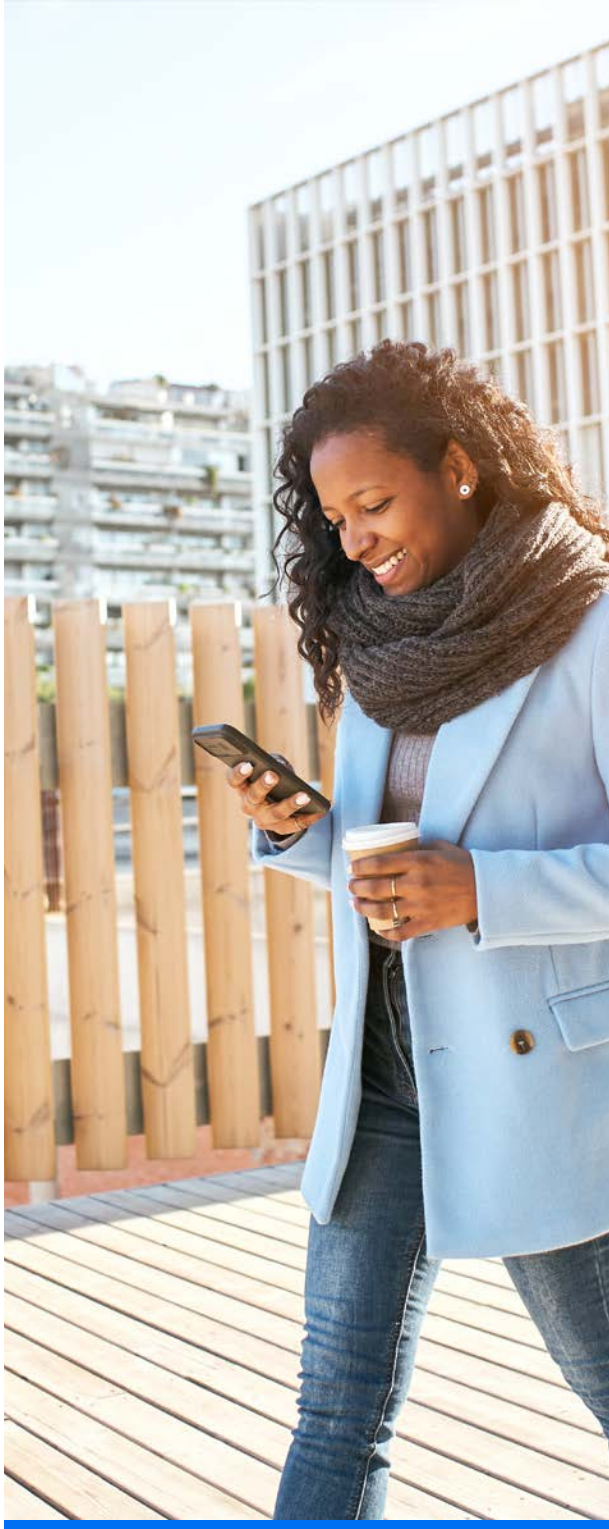
Generative AI, machine learning, large language models, neural networks, and more. It's a lot to take in, from what the definitions mean to how artificial intelligence (AI) could affect lives and businesses.

Conversations and the news have focused on advances in generative AI – creator of text, images, and computer code – and the large language models that generate prose, conduct conversations, and are built upon massive amounts of internet data. Users have been entranced by the possibilities of improving everything from emails to term papers to sales presentations to medical care. At SAP® Concur,® we're excited about the transformative possibilities of AI, but AI isn't news to us – we've been working with it for years.

For nearly a decade, we have been infusing AI and machine learning into business solutions like ExpenseIt,® Verify, and Invoice Capture. For us, technology is part of a commitment to innovation and meeting and anticipating business needs. Like the need for efficiencies amid tight budgets, a shortage of qualified employees, and the shift to hybrid work. Or the need for greater insights and timelier decisions amid ever-competitive markets. And, given global instability and other uncertainties, the need to be resilient and ready for change.

> "**The goal isn't to put any human out of a job.** But with AI we can make life easier for people doing mundane audit-type tasks and empower them in roles where they can add more value."

Fred Fredericks, SAP Concur SVP, chief product officer, and head of engineering



## AI Terminology

Read our glossary to learn more about AI terms you're likely hearing today.

AI Terms Glossary

It's a learning process, exploring what AI does well – auditing and itemizing receipts, for example – and finding out where it might be less effective, like when a user could just click a couple of buttons instead of talking or typing a chatbot through a task. Having been at AI for a while, SAP Concur has built the foundation and critical judgment to assess advances like generative AI and the opportunities and promises that large language models including Claude, Bard, ChatGPT, and others present.

"Only two other innovations during our lifetimes have been as transformative as AI's large language models," says Fred Fredericks, SAP Concur SVP, Chief Product Officer, and Head of Engineering. "The first is Google's web search. The second is the iPhone, which put computing devices in our pockets."

For businesses, that transformative power will bring a major break from the past.

"AI removes the tradeoffs organizations historically had to make between efficiency and compliance in their travel and expense processes," says Chris Juneau, head of SAP Concur market strategy. "This seismic shift means businesses can be more intelligent, resilient, sustainable, and profitable."

In addition to its own AI models, SAP Concur is tapping into SAP's partnership with seven trusted large language model companies to identify technology that best fits with and best amplifies our solutions. We're also working closely with other SAP units, including Ariba, Fieldglass, and the SAP Business Technology Platform, to leverage AI technology and ensure a consistent experience.

82%

of finance leaders hope AI makes **business operations** more efficient[1]

66%

of finance leaders hope AI makes **risk management** more effective[1]

**Source: 1.** CFO Insights Report: A New Role in Managing Uncertainty, SAP Concur, October 2023.

The possibilities intrigue engineers and other SAP Concur team members. They have ideas, plenty of them. There are three at the top of the development list because they solve problems, add insights, and simplify use:

- **Accurately estimating travel costs.** Fill in dates, locations, and other fields, and a mix of large language model, traveler data, policies, and other sources estimates flights, hotels, meals, and car rentals. Even simpler, the traveler types in a sentence to supply the details.
- **Effectively itemizing receipts.** Accurately itemizing hotels and other receipts is a challenge for automation and humans. A combination of OCR and AI models can vastly reduce the errors and time spent.
- **Making mobile expenses even easier.** Snap a picture of a receipt, tell the solution to create an expense item,and then quickly correct it if needed. Handled by generative AI, this can be done in multiple languages, speeding and easing implementation.

Throughout, users will know when generative AI is at work in the solution because transparency is a key component of the trust customers place in SAP Concur.

Much has changed since 2018 and 2022, when SAP Concur published whitepapers on where AI was headed. As the technology leapt forward, warnings grew louder about possible risks, ranging from job losses, to misinformation, to bias, to the rise of the machines a la "The Terminator." There are calls for regulation and to slow down and not innovate society into a corner. SAP Concur – and parent SAP – takes its responsibilities to customers and society seriously and won't shy from issues of ethics, security, privacy, and bias. Values won't be compromised for the sake of progress.

Unlike many companies in the artificial intelligence space, SAP Concur develops solutions specifically for businesses and their challenges. They are solutions designed to allow employees to spend less time with the technology instead of more and to concentrate on valuable work instead of manual tasks. At the same time, the technology – and the big decisions and value judgments – remains under human control.

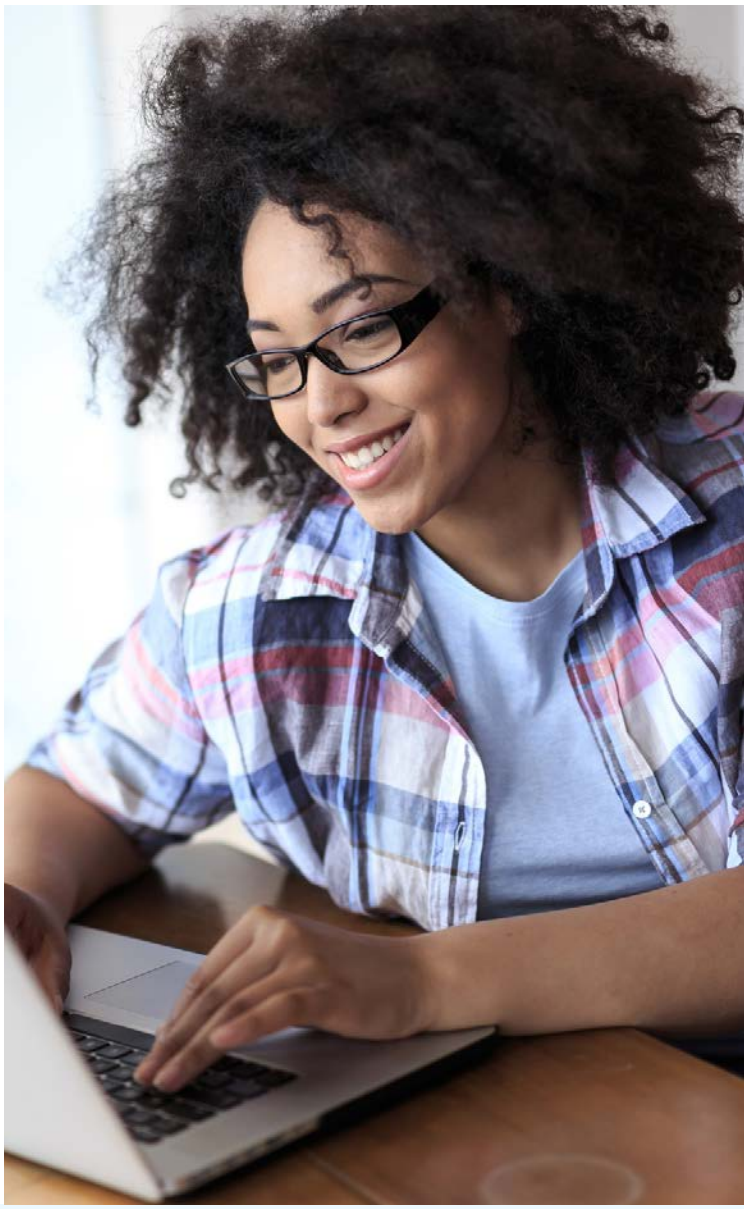
In this exciting but uncertain time, SAP Concur brings two critical advantages to the table. First is an AI track record of building business solutions that serve a purpose – they're not as catchy as mimicking Jay-Z's voice, but they can prove transformative for customers. Second is a huge amount of customer data – fueled by our 49.4% market share in travel and expense management software[2] – on spending policies, preferences, and compliance. Together, they produce relevant, reliable, and responsible results.

The intent is to empower organizations to anticipate instead of react, to seize opportunities instead of them passing by unseen, to ward off problems instead of fixing them after the fact. It's moving information and insight further ahead in the business process, a "shift left" as some describe it.

"With a lot of our software today, businesses generate and then analyze reports. When they find a problem, then they go back and fix it," says Tim Lebel, vice president and head of spend products at SAP Concur. "With AI-infused solutions, the system will advise them of the problem and say, 'We can fix it right now – just click this button.' This is where customers will start realizing the value of AI, and it will lead to a back office that practically manages itself. We'll be able to provide customers insights before they even think about asking the question."

**Source: 2.** IDC Worldwide Travel and Expense Management Software Market Shares," 2022. Evolving Travel Models. Pushing Digital Transformation Doc #US49194223, September 2023.

# Where SAP Concur and AI are Heading



Corporate spending and travel policies can be dense and hard to follow, even for willing employees. But what if instead of delving into a 30-page policy document for clarity, an employee could just ask a large language model to do something AI is good at: quickly summarize the relevant point they need to understand? Or be able to ask, "How many expense reports haven't been approved?" within an application, turning words into a database search and a prompt answer.

It's not hard to see what that could mean for compliance, costs, efficiency, and frustration levels. They're also examples of how conversational AI – plain-language interactions that can be written or spoken – will impact solutions. The key is determining where AI is most effective while also providing interaction options, because not every function or every employee is best served by talking to a computer or smartphone.

## AI is on the job

AI is already at work in SAP Concur solutions:

**Verify** automates and enhances processes, helping spot duplications, errors, out-of-policy spending, and patterns difficult for humans to see. Auditors gain spending visibility and time to focus on riskier transactions.

**Intelligent Audit** combines AI and a team of human auditors to find misuse, waste, and non-compliant spending. It allows finance teams to focus on higher-value, more satisfying work such as forecasting.

**Concur Detect solutions by Oversight** analyzes post-payment trends and identifies patterms. The extension integrated into Concur Expense brings AI into a solution that auditors already use.

**ExpenseIt®** runs within the SAP Concur mobile app as part of Concur Expense. It lets employees snap a picture of a receipt and uses AI to find and interpret relevant data – amount, seller, tax info, and more – then automatically flows to an expense report.

Parent company SAP has multiple offerings incorporating generative AI:

**SAP SuccessFactors** generates interview questions tailored to candidates' resumes and specific job descriptions.

**SAP Extended Warehouse Management** delivers AI-driven suggestions to improve warehouse organization, stocking, and replenishment.

**SAP S/4HANA** assists collection specialists with forecasting late payments and prioritizing which customers to follow up with.

**SAP Digital Assistant**, across solutions, uses a natural language interface to provide tailored assistance.

## Speeding up processes and innovation

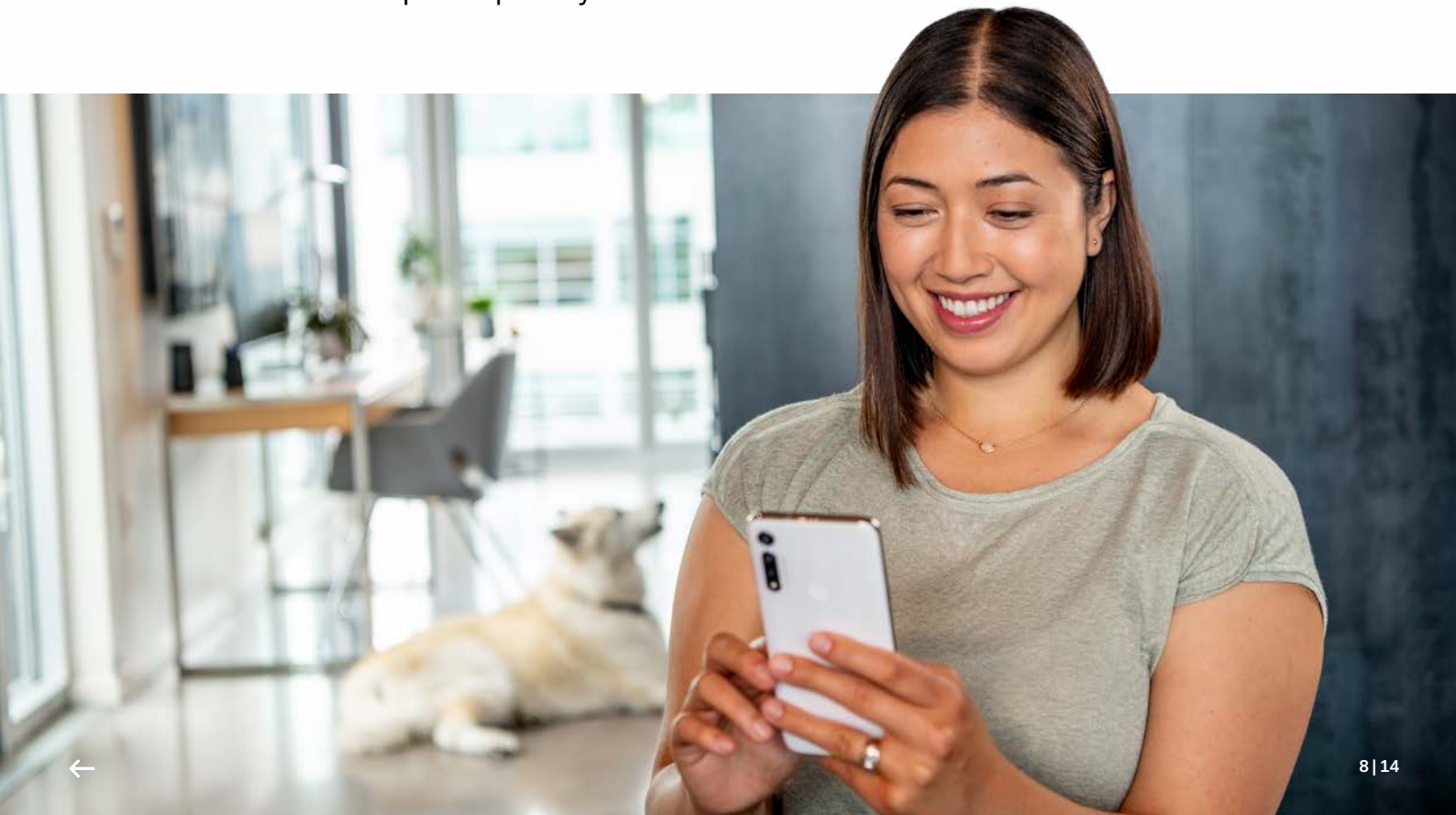
AI promises to move tasks and information further upstream in the business process.

"Why wait until after the expense report has been submitted to realize something is missing or maybe out of policy?" says Dan Barker, SAP Concur senior director, spend solution management, T&E marketing and solutions. "Instead, we can make that education and guidance available before and immediately after a card swipe. It gives us the chance to actually change spending behavior, and that's ultimately the nirvana of spend management, creating a real-time mechanism to help customers and their employees stay compliant without overburdening them."

For businesses, it could bring a rethinking of processes and terminology. When compliance comes earlier and involves prevention instead of backstopping, "Can you even call it audit anymore?" Fredericks asks somewhat philosophically.

AI also will accelerate the development of features and solutions. The mobile assistant for creating expense items, for example, can take questions and corrections in multiple languages but, because AI translates, the feature wouldn't have to be rolled out a language at a time.

"With generative AI, we can innovate faster," Lebel says, adding it's leading to a rethinking of overall product architecture. "Before, we might have had to build a lot of different components to deliver a feature, but now by including a generative AI we can build the feature a lot faster. The speed of innovation and technology is driving people to try new things."



# Building on experience

AI excels at tasks like digging through massive amounts of expense data to collect and verify information. That makes managing taxes, ensuring compliance, mitigating risk, and auditing expenses good targets for AI, and those areas helped SAP Concur build a foundation for incorporating recent AI advances. Time and persistence honed the technology.

When ExpenseIt launched a decade ago, a team of people looked at receipts photographed on the app, checking amounts and fixing errors. "And over time, the speed and accuracy increased to the point – it took about five years – where the AI was actually more accurate than a human," Fredericks says.

Another example is Verify, which automatically audited 97% of 2.8 million expense reports passing through the solution over 18 months of 2022 and 2023, leaving a small percentage for finance teams to examine.[3]

"Spotting fraud is just the start," Juneau says. "The true power of our solutions comes when data informs future decisions. So AI finance teams can better plan and negotiate expense budgets. Or travel and expense policies can be adjusted to current business needs. Or a company can calculate the actual return on investment of business trips and other expenses."

**Source: 3.** SAP Concur Blog: "From Back Office to Tip of the Spear: How AI Will Transform T&E," Christopher Juneau, August 17, 2023.

# Leveraging the power of data

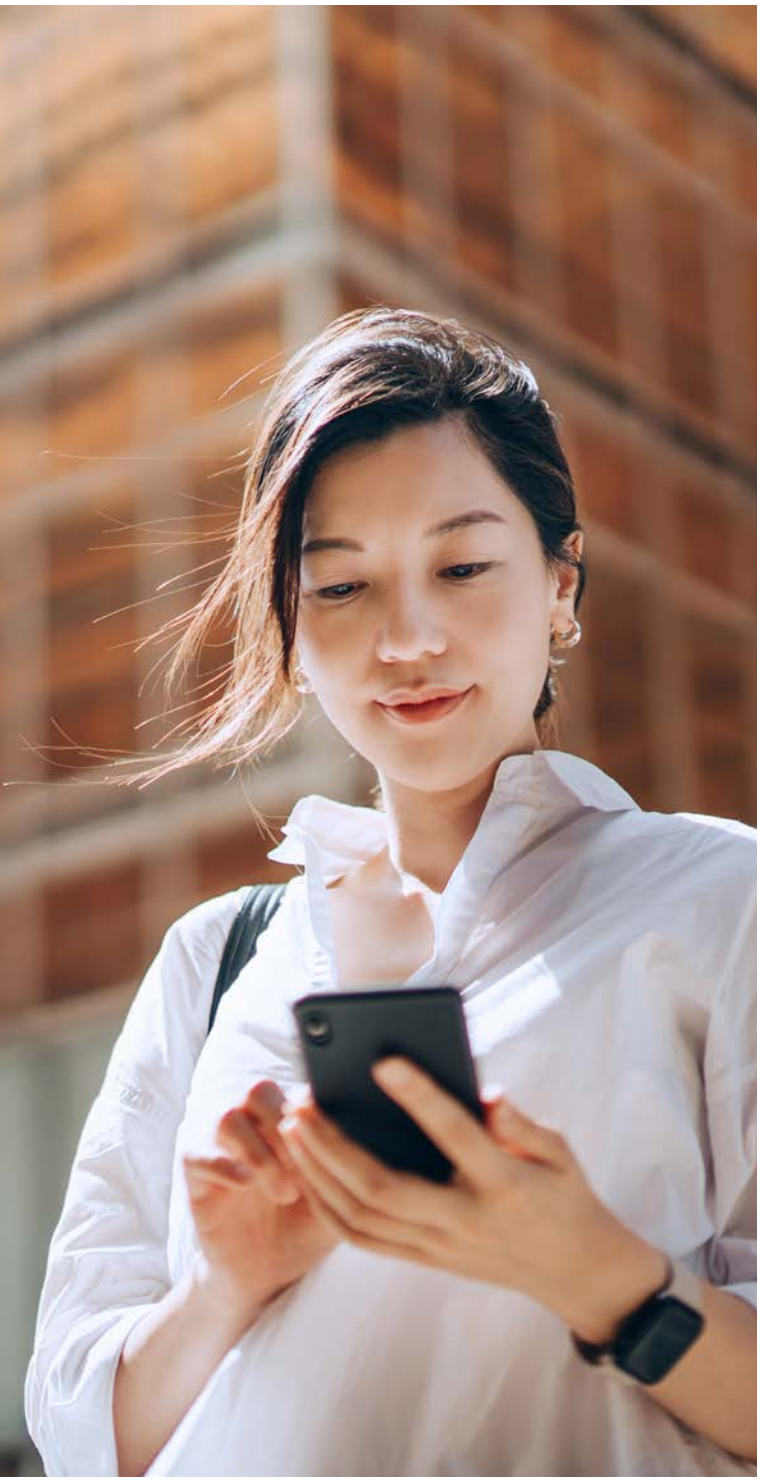
At its core, AI combs massive amounts of data, from the internet and elsewhere, to find patterns, to predict what word should come next, to create paragraphs and craft images, and to understand and solve business problems.

SAP Concur, too, has massive amounts of customer data, information used to inform our solutions and provide the insights and benchmarks companies need to guide operations and strategies. But that information on policies, spending preferences, and historical patterns is proprietary. And it will stay that way.

SAP will use generative AI and large language models to enrich insights but won't allow a customer's information – their data – to be used to train another technology company's large language model (and be set free in the wild). So while the combination of customer data and AI will be leveraged to its fullest, it will be done prudently.

"That's going to be the big generational leap we're able to make, being able to look at things that aren't SAP Concur data to help optimize solving business problems, not just travel problems," Fredericks says. "Generative AI by itself can tell you the cost of something travel-related over the past 20 years, but it can't tell you what your company policy is, what your company generally spends, or what you spent on those types of things over the past five years. Combining AI and our data, that's where we can add real value."

# What Businesses Should Consider



AI is new territory for most businesses, so knowing the right questions to ask is helpful.

First, to frame the conversations, businesses should realize current large language models are still learning and fallible. They can deliver incorrect answers and make things up. They're often based on older information. They're better at some things, like language, than others, like math. They can excel at surprising tasks: "Who but SAP Concur would have thought generative AI would have been good with line items from receipts?" Lebel asks.

An overarching question for organizations is determining the exact business issues they're trying to address and how an AI solution can help.

"A business looking at technology to implement will be promised many things. You need to ask questions about what problems you are trying to solve. And then can you measure those efficiencies or potential gains?" Lebel says. "A large language model isn't inexpensive to run. If you're going to invest money toward that, you need to be able to measure the value that comes out of it."

There are other fundamental questions, as financial tech writer and podcaster Theodora Lau notes.

"Responsible AI development is crucial," Lau says. "Consider the boundaries and limitations of current large language models... Can the AI tools, such as chatbots, be manipulated and exploited by bad actors? How can you ensure explainability and transparency in the algorithms that you develop and deploy, and accuracy in the results they produce?"[4]

**Source: 4.** Quote adapted from sponsored blog post. The FinTech Prose: "AI as a competitive advantage in spend management," Theodora Lau, August 24, 2023.

# Ethics and Customer Security

Artificial intelligence and large language models will be disruptive. To technology and business but also to jobs. How exactly that plays out is still to be determined but human qualities like exercising judgment will continue to be valued.

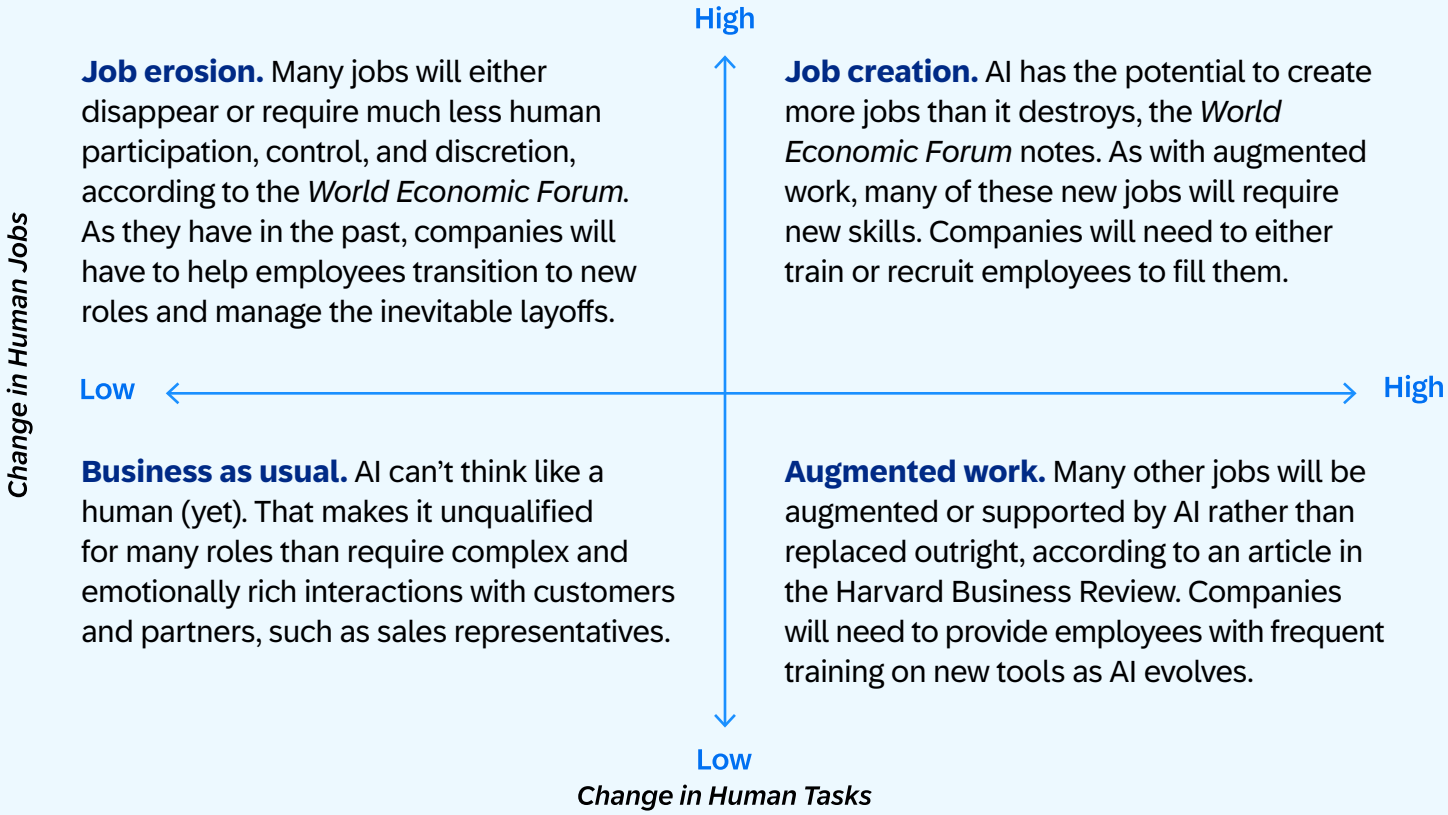
"Most companies are aware of the burden mundane tasks place on the different job roles. This is less about job loss and more about making those jobs better," Barker says. "When we talk about the technology, we talk about using technology and people together, because we know that's actually the sweet spot."

Companies put their trust into the business solutions they invest in. That places an almost fiduciary responsibility on SAP Concur, which recognizes that trust lost is not easily regained.

The challenge is that the disruption is coming quickly, which can create issues. Perspective is valuable, from looking at the past to retaining awareness of the benefits that could come, such as using AI to identify disease-fighting chemical compounds.

"We have to keep in mind that the world didn't end when the internet, personal computer, or television was invented," Fredericks says. "There's real quality-of-life enhancements that can come from AI, but it might be uncomfortable for a while. The technology changes things, and we adapt."

**AI and Human Work: 4 Scenarios**[5]




Source: 5. Four Scenarios for the Future of Workplace AI, SAP Insights.

# A human-centered approach

Guiding SAP Concur and its approach to AI are the SAP ethical guidelines. It's a human-centered approach, focusing on ethical use of customer data, eliminating the bias that can occur in AI systems, and ensuring its use is transparent and explainable.

SAP was the first European technology company to release AI ethics guiding principles and to form an outside ethics advisory panel. It released a Global Ethics Policy in early 2022 and, more recently, a SAP AI Ethics Handbook.

The handbook makes a clear declaration of intent in its opening paragraph: "For people to trust in AI solutions the development, deployment, use, and sale of AI systems must be governed by clear moral rules."

The policy emphasizes human agency and oversight, allowing decisions by an AI system to be overruled by humans. Oversight, thought, and deliberation are focuses. Recently, SAP leadership urged both caution and regulation.

"The dynamic developments in the generative AI space have made it very clear that we urgently need international rules and guidelines for AI. This is a belief shared by politicians, scientists, developers, and users alike," says Christian Klein, CEO and member of the executive board of SAP. "As companies accelerate their adoption of AI technology, it is crucial to commit to ethical practices and self-regulation until comprehensive international AI regulations are put into place. By doing so, we can ensure a safer, fairer, and more responsible AI-driven future for all."

From data security to making clear when AI is at use to an ethics board that scrutinizes product features before release, SAP Concur is keeping the focus on ensuring humans continue to do what they do best.

"When there's a true value decision that needs to be made, the computer can give you your options. But the humans have to decide. Machines don't have the emotional capability to actually make a true judgment," Fredericks says. "And that's where humans will always win."

## SAP AI Ethics Handbook

Download the Handbook

## SAP Ethical AI Guiding Principles

1. We are driven by our values.
2. We design for people.
3. We enable businesses beyond bias.
4. We strive for transparency and integrity.
5. We uphold quality and safety standards.
6. We place data protection and privacy at our core.
7. We engage with the wider societal challenges of AI.

# About SAP Concur

SAP Concur is the world's leading brand for integrated travel, expense, and invoice management. Driven by a relentless pursuit to simplify and automate everyday processes, the solutions guide employees through business trips, move authorized charges directly into expense reports, and automate invoice approvals.

By integrating near real-time data and using AI to analyze transactions, businesses can see what they're spending, improve compliance, and avoid possible blind spots in the budget. SAP Concur is imagining a world where travel and expenses practically manage themselves, helping businesses run at their best every day.

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## AI Terms Glossary

**Neural network:** Modeled after the human brain, it's a mathematical system that develops skills by uncovering statistical patterns in data. The network is made of layers of artificial neurons: The first layer receives input data and the final one outputs results.

**Large language model (LLM):** A neural network that learns such skills as generating prose, conducting conversations, and writing computer code. It analyzes massive amounts of text from the internet, and its basic function is to predict the next word in a sequence.

**Generative AI:** Technology that creates such content as text, images, video, and computer code by identifying patterns in large bodies of data. Claude, ChatGPT, Bard and other LLMs do this with text, DALL-E and Midjourney with images.

**Natural language processing:** Large language models use the technique to understand and generate human language, including classifying text and analyzing its sentiment. It involves a combination of machine learning algorithms, statistical models, and linguistic rules.

**Machine learning:** A subset and practical application of AI, it uses algorithms so computers can learn on their own without a programmer having to tell them each step. With massive amounts of data input, a computer can recognize patterns and predict outcomes. Examples include spam filtering, voice recognition, and detecting and preventing fraud.

**Artificial general intelligence (AGI):** The point, not reached yet, where computer intelligence matches or surpasses human intelligence. Some artificial intelligence labs identify AGI as their ultimate goal, while some experts contend AI is far from that level of sophistication.