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Driving business value *with AI agents*

A conversation with
Dr. Walter Sun
Head of AI, SAP

Conversations
FOR TOMORROW

DR. WALTER SUN

Head of AI

SAP

DRIVING BUSINESS VALUE WITH AI AGENTS

Dr. Walter Sun is Senior Vice President and Global Head of Artificial Intelligence at SAP. He leads a centralized AI unit that engineers AI products for implementation and reuse across SAP applications. Prior to SAP, Dr. Sun was Vice President of Copilot Applied Artificial Intelligence for business applications at Microsoft. Previously, Dr. Sun worked at BlackRock Financial Management as a quantitative portfolio analyst and at Apple Inc. as a senior software engineer and scientist.

SAP'S AI STRATEGY: THE 3RS FRAMEWORK

How is SAP integrating AI into business operations?

Dr. Walter Sun: SAP follows the "3Rs" framework to ensure AI solutions are impactful and trustworthy:

1. **Relevant –** AI must be tailored to meet business needs. We incorporate industry-specific context into our AI models. For example, a supply chain company in the US may have different requirements than one in the UK, and our AI adapts accordingly.
2. **Reliable –** AI must provide accurate, fact-based outputs. We use grounding techniques [connecting model output to verifiable sources] and provenance checks to verify AI-generated information, minimizing hallucination and maximizing accuracy.
3. **Responsible –** AI must be ethical, explainable, and compliant with regulations. Transparency is at the core of our approach, ensuring users understand the logic behind AI-driven decisions.

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WE USE GROUNDING TECHNIQUES [CONNECTING MODEL OUTPUT TO VERIFIABLE SOURCES] AND PROVENANCE CHECKS TO VERIFY AI-GENERATED INFORMATION, MINIMIZING HALLUCINATION AND MAXIMIZING ACCURACY.

SAP integrates AI into three key areas:

- **Native AI integration:** AI is embedded into SAP applications like SuccessFactors for HR management, allowing users to generate job descriptions using natural language.
- **Joule AI copilot:** Joule is SAP's digital assistant, enabling users to execute tasks seamlessly across SAP applications.
- **Business Technology Platform (BTP):** Our generative AI (Gen AI) hub offers access to over 30 large language models (LLMs), allowing businesses to build and customize AI applications.

> **AI must be ethical, explainable, and compliant with regulations"**

How does Joule AI – SAP's digital assistant – work?

Dr. Walter Sun: Joule is SAP's digital copilot, designed to facilitate natural language interactions across business applications. It serves as a bridge between users and various AI agents, orchestrating tasks efficiently.

For instance, if a user wants to schedule a business trip, Joule can:

1. Check both the user's calendar and those of their colleagues to find a period when all relevant parties are available.
2. Coordinate with SAP's travel platform to book flights and hotels.
3. Connect with CRM [customer relationship management] systems to notify relevant stakeholders and log the meeting.

Joule stands out from other AI agents because of its deep integration into the SAP ecosystem. It can interact across multiple SAP applications – finance, supply chain, HR, customer relations – offering a unified, AI-driven experience. Unlike standalone AI agents, Joule connects various enterprise functions, allowing organizations to streamline processes across departments.

AI ADOPTION: DRIVERS AND CHALLENGES

What are the key drivers behind businesses adopting AI and AI agents?

Dr. Walter Sun: JThe primary motivation for businesses to adopt AI is to drive efficiency and create value. Organizations want to achieve more in less time, enhance their decision-making, and automate repetitive tasks. AI technology – including AI agents – offers powerful tools to help businesses meet these objectives.

Another important factor is customer demand. End-consumers and enterprise clients expect seamless, intelligent interactions. AI can enhance customer service, personalize user experiences, and improve overall business efficiency.

But AI adoption is not just about automation. It is about staying competitive. Historically, every major technological shift has created winners and laggards. Organizations that recognized the advantages of PCs early on gained an advantage over those that stuck with typewriters. Similarly, when the internet emerged, businesses that embraced online connectivity became more efficient than those that didn't.

> **AI adoption is not just about automation. It is about staying competitive"**

AI represents another paradigm shift. Companies recognize they must integrate AI into their operations to remain competitive. They want to explore AI's potential while minimizing risks related to security and privacy.

What are some of the biggest challenges when adopting AI?

Dr. Walter Sun: Many organizations are eager to explore AI but are still in the early stages and are proceeding cautiously. One of their biggest concerns is around security and privacy. Organizations want to harness AI while protecting their data. They also want transparency on how AI models make decisions, as the key to building trust in the system. Trust is a major hurdle. Businesses need confidence in AI systems before granting them autonomy. One way to build trust is through "read-only" AI implementations, where AI provides recommendations, but humans make the final decision. Over time, as AI consistently delivers reliable results, businesses become more comfortable automating more tasks.

Data quality is another challenge. AI models rely on high-quality, structured data. Poor data leads to inaccurate AI outputs. Organizations must invest in data management and governance to maximize AI effectiveness.

Bias in AI models is also a concern. AI learns from historical data, which may contain biases. Businesses must carefully curate training data and apply bias-mitigation techniques to ensure fairness and accuracy in AI decision-making.

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THE EVOLUTION OF AI TRUST

How do you think organizations will adapt to AI decision-making?

Dr. Walter Sun: The adoption of AI autonomy will follow the pattern of past technological shifts. When ecommerce first emerged, many people were reluctant to enter credit card information online. But over time, online shopping became the norm and, today, we rarely think twice before making digital transactions.

Similarly, businesses today supervise AI closely but, as the tech proves its reliability, organizations will gradually expand AI's role from low-risk automation to more strategic decision-making.

For example, AI-driven travel-planning systems already suggest itineraries, book flights, and reserve hotels. Initially, users may review every detail before confirming but eventually they may allow AI to manage bookings autonomously. This will be the natural progression of AI adoption across industries.

How autonomous should AI agents be, especially in critical environments like healthcare and aerospace?

Dr. Walter Sun: AI autonomy is a spectrum. Over time, as confidence grows, organizations can gradually increase AI autonomy by setting predefined thresholds. For example, if an AI agent is handling reimbursements, approvals under $100 could be processed automatically, while amounts over $10,000 might require managerial approval. This structured approach helps build trust in AI without compromising oversight.

The same principle applies to customer service. AI agents can manage standard inquiries but escalate complex cases to human representatives. Similarly, in finance, AI can validate invoices and cross-check financial data before requiring human approval for large transactions.

"As the tech proves its reliability, organizations will gradually expand AI's role from low-risk automation to more strategic decision-making"

However, in critical environments such as healthcare, aerospace, or industrial production, moving to full AI autonomy is not advisable. These fields demand rigorous validation and accountability. AI can assist by analyzing vast amounts of data, flagging anomalies, and recommending actions, but human experts must always take high-risk decisions. As AI models become more sophisticated and reliable, the balance between AI automation and human oversight will continue to evolve.

THE RISE OF MULTI-AGENT AI SYSTEMS

How do multi-agent AI systems work, and how are they transforming business processes?

Dr. Walter Sun: Multi-agent AI systems enable different AI agents to collaborate and execute complex workflows. A great example is dispute management. When a customer files a complaint about an incomplete delivery, multiple departments – finance, supply chain, and customer service – need to coordinate. Traditionally, this process could take days or even weeks.

With AI-powered multi-agent systems, the workflow is streamlined:

1. A conversational AI agent interacts with the customer and logs the dispute.
2. The supply chain AI agent retrieves delivery records to verify shipment details.
3. The finance AI agent cross-checks invoices to confirm payment and refund eligibility.
4. The CRM AI agent drafts a resolution email based on company policies.

"AI agents communicate with each other, gather relevant data, and present a complete resolution to the customer"

What once required extensive human coordination now happens within minutes. AI agents communicate with each other, gather relevant data, and present a complete resolution to the customer, with final approval from a human supervisor. This dramatically improves efficiency and customer satisfaction.

Q: What stage are businesses at with implementing multi-agent AI systems?

Dr. Walter Sun: Many businesses are experimenting with multi-agent AI systems in controlled environments before scaling them. At SAP, we collaborate with clients through early adopter programs to integrate multi-agent AI solutions into their workflows.

> **Many businesses are experimenting with multi-agent AI systems in controlled environments before scaling them"**

Some enterprises are testing AI-driven procurement systems where different AI agents handle supplier negotiations, contract validation, and purchase approvals. Others are deploying AI-driven HR systems that automate candidate screening, interview scheduling, and onboarding processes. The goal is to build confidence in AI before enabling full-scale automation.

As businesses gain experience with AI-driven automation, we expect broader adoption of multi-agent AI systems in industries like finance, supply chain management, and customer support.

AI INVESTMENT AND ROI EXPECTATIONS

What level of investment is required to implement AI agents?

Dr. Walter Sun: Investment in AI depends on organizational size and existing infrastructure. Large organizations with dedicated data science teams can develop custom AI solutions, while mid-sized organizations often use SaaS [software-as-a-service]-based AI platforms, such as SAP's Joule AI, for faster deployment.

For most businesses, the investment includes:

- AI software and platform subscriptions
- Integration with existing enterprise systems
- Employee training on AI-powered workflows

ROI varies depending on use cases. Organizations that deploy AI for high-volume tasks, such as dispute resolution or financial reconciliation, often see rapid ROI. For example, if AI-driven automation enables an organization to double its customer service capacity without additional staffing, the efficiency gains quickly outweigh the initial investment.

In many cases, organizations recover AI investment within months, especially when AI-driven automation leads to measurable improvements in productivity and service quality.

IN MANY CASES, ORGANIZATIONS RECOVER AI INVESTMENT WITHIN MONTHS

SUSTAINABILITY AND AI: MANAGING THE CARBON FOOTPRINT

How can organizations mitigate AI's environmental impact?

Dr. Walter Sun: Sustainability is an important consideration in adoption of AI. At SAP, we provide a Sustainability Control Tower that helps organizations visualize their carbon footprint and take corrective actions. AI can help identify inefficiencies, such as offices that leave lights on overnight or use excessive air conditioning, by analyzing energy consumption data and providing insights upon which management can act.

Additionally, SAP's Generative AI Hub supports multiple LLMs with an abstraction layer that optimizes both cost and energy consumption. Not all AI tasks require the most powerful models. For simple customer inquiries, a lightweight AI model can be used instead of a high-compute model like GPT-4. By selecting the most efficient model for each task, businesses can reduce energy consumption and improve cost-effectiveness while maintaining AI performance.

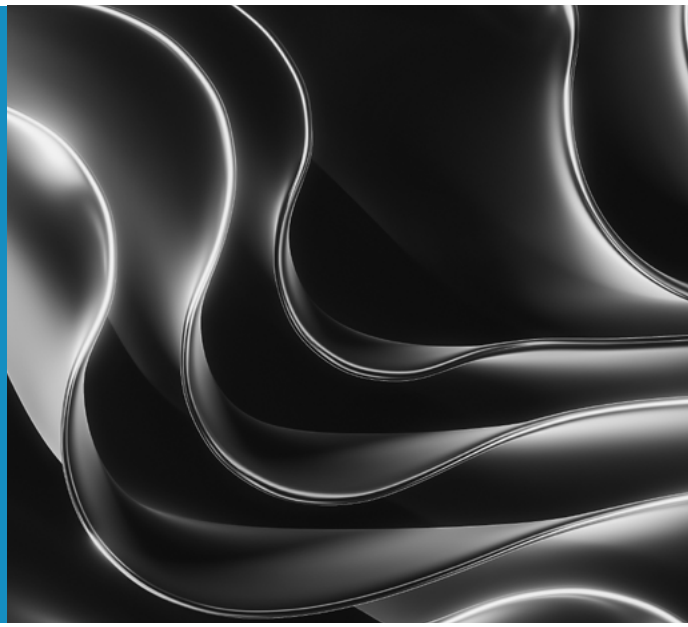
LOOKING FORWARD

How do you see AI agents collaborating with human teams?

Dr. Walter Sun: AI is not here to replace humans but to augment human capabilities.

As AI technology advances, we may see hybrid teams where AI agents take on more operational responsibilities, while humans focus on strategic decision-making. AI assistants will become integral to daily workflows, coordinating schedules, drafting reports, and optimizing business processes.

"By selecting the most efficient model for each task, businesses can reduce energy consumption"



Will IT departments transform into HR departments for AI agents, as Jensen Huang [CEO of NVIDIA] recently suggested?

Dr. Walter Sun: While AI agents will play a larger role in business operations, IT departments will not disappear. Rather, IT teams will evolve to manage AI-driven workflows, ensuring AI models are properly integrated and aligned with business needs. Similarly, HR departments will need to train employees on AI tools and develop new roles focused on AI oversight and governance.

HR DEPARTMENTS WILL NEED TO TRAIN EMPLOYEES ON AI TOOLS AND DEVELOP NEW ROLES FOCUSED ON AI OVERSIGHT AND GOVERNANCE

A historical comparison is the development of the role of librarians. Before search engines, librarians helped people find information manually. With the rise of the internet, their role shifted to teaching users how to navigate online resources effectively. Similarly, professionals in IT and HR will upskill to manage AI-driven processes, ensuring AI is used effectively and ethically.

How will AI agents evolve over the next three to five years?

Dr. Walter Sun: AI agents are becoming more personalized. Initially, AI models were trained on broad datasets, making them general-purpose assistants. Now, we're moving toward industry-specific AI models tailored for fields like finance, supply chain, and healthcare.

> "AI agents are becoming more personalized"

The next evolution is personal AI agents that understand individual preferences and workflows. Imagine an AI assistant that knows your preferred airlines for business trips, prioritizes your emails based on urgency, and summarizes key updates from global markets before your morning meetings. This level of personalization will transform productivity, making AI indispensable.

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