



Agentic AI for AP: A new era for finance leaders

Transforming accounts payable with AI

Traditional automation has reached its limits. Finance leaders are under increasing pressure to modernize accounts payable (AP) operations, reducing costs, ensuring compliance, and delivering insights that drive efficiency. The next evolution is agentic AI: autonomous systems, often called AI agents, that make decisions, adapt in real time, and continuously learn from outcomes. This evolution will see accounts payable professionals shift from being heavily focused on admin-heavy, repetitive tasks to becoming managers of AI agents, requiring finance leaders to address employees' training and development needs.

With a focus on invoicing and expense auditing, this white paper explores how agentic AI transforms AP workflows, covering autonomy levels, hybrid workforces, and transformation strategies.

The urgency for agentic AI

82%

of business leaders say this is a pivotal year to rethink strategy

81%

expect agents integrated in their company's AI strategy within 12-18 months

The evolution of autonomy in accounts payable

Accounts payable is perfectly matched to agentic AI adoption. Its workflows and standard operating procedures (SOPs), which are generally high-volume, rule-based, and data-driven, are ideal for intelligent automation.

Agentic AI evolves through distinct levels of autonomy, each delivering progressively greater independence and strategic value. The table below, based on AI autonomy scales developed originally by the SAE International for autonomous vehicles.

Figure 1: The Five Levels of AI Autonomy in Accounts Payable

Level	Description	AP Example	Business Value
1. Rules-based automation	Automation tools like robotic process automation (RPA) and optical character recognition (OCR) follow static rules with human validation	Extracting invoice data and manual entry verification	Efficiency gains but limited adaptability
2. Assisted intelligence	AI flags anomalies or policy breaches, but relies on human approval	Duplicate invoice or policy violation alerts	Improves accuracy and maintains human control
3. Conditional autonomy	AI acts within defined boundaries, making low-risk decisions autonomously	Automated matching of invoices to purchase orders	Reduces manual workload and enhances throughput
4. Full autonomy with oversight	AI manages end-to-end workflows, escalating only when ambiguities arise	Autonomous extraction, validation, and posting	Near-autonomous AP processing with the ability to audit
5. Strategic autonomy	AI optimizes processes, policies, and actions proactively	Adjusting payment timing based on cash-flow trends	Transforms AP into a strategic, predictive function

How agentic AI operates in accounts payable

AI agents can automate many SOP-driven accounts payable functions. In invoice processing and expense auditing, where workflows are high-volume, repetitive, and rule-based, AI agents can quickly learn, replicate, and optimize.

For example, an AI agent in invoice processing can capture invoice data by extracting details using OCR and language models. It can then cross-reference purchase orders, vendor data, and contract terms. Once this has been completed, the agent can either approve the invoice or escalate it for human review if it has detected any potential flags that it cannot resolve. As it does so, it is learning and applying that learning, so that similar future scenarios can be resolved without escalation.

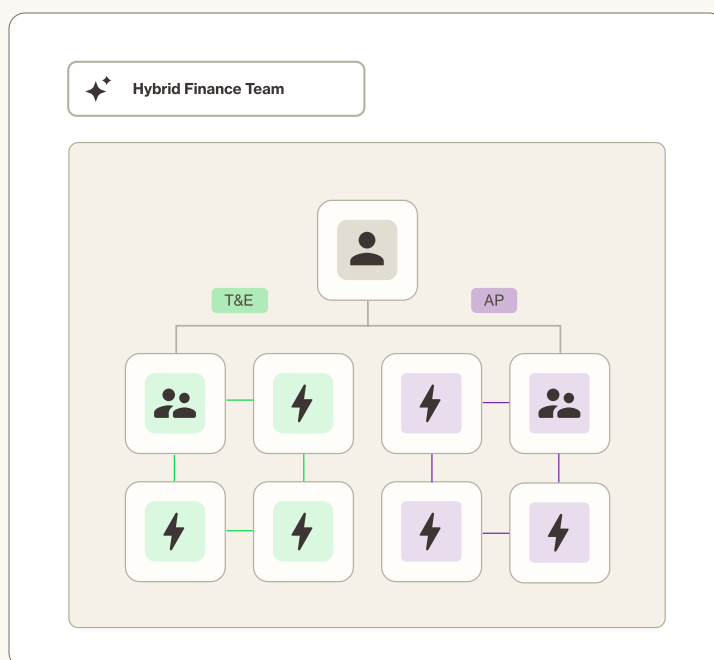
An AI agent in expense auditing can extract and categorize receipts, check compliance with policy, and detect duplicates or anomalies. Once it has processed all this information, it can either auto-approve the expense or escalate to a human if it cannot resolve any ambiguities. Again, it is continually learning and improving through the feedback it is receiving.

For the business, this leads to faster cycle times, a reduction in the number of errors, and stronger compliance.

The hybrid workforce: Humans and digital coworkers

Agentic AI ushers in a new, hybrid workforce model, where humans and intelligent agents, often referred to as digital coworkers, work together and collaborate.

Ideally, these digital coworkers execute well-defined, repeatable tasks with speed and accuracy, while human professionals focus on strategy, governance, and innovation. The balance between the two will define the next generation of finance teams. Think of digital coworkers as scalable teammates that autonomously execute finance SOPs, while continuously learning from real-world experience and feedback. As AI agents evolve, they can also interact with each other, sharing information across different teams, leading to better and more nuanced decision-making. Eventually, AI agents will become so sophisticated that they will take over many of the focus areas that human managers have today.



Hybrid workforce model

In a hybrid finance team, human managers collaborate with AI agents across departments like T&E and AP. Each agent specializes in specific tasks – from data extraction to compliance checks – while humans provide oversight, handle exceptions, and ensure accountability.

Redefining finance roles in the age of agentic AI

What does this mean for accounts payable teams? As digital coworkers take on repetitive work, finance professionals will be able to move into higher-value roles. Companies using AI agents will require their human professionals to oversee and train them, manage escalations, and ensure compliance. Effectively, they will be the managers of AI agents. Finance leaders need to have a plan to address upskilling in data interpretation and validation, prompt and policy design, workflow optimization, supplier relationships, and AI oversight and ethics. These will be the most sought-after skills of the future, and finance leaders need to work with internal training teams to provide ongoing training and development. This will also become a positive differentiator in the recruitment and retention of employees.

Building trust through human oversight

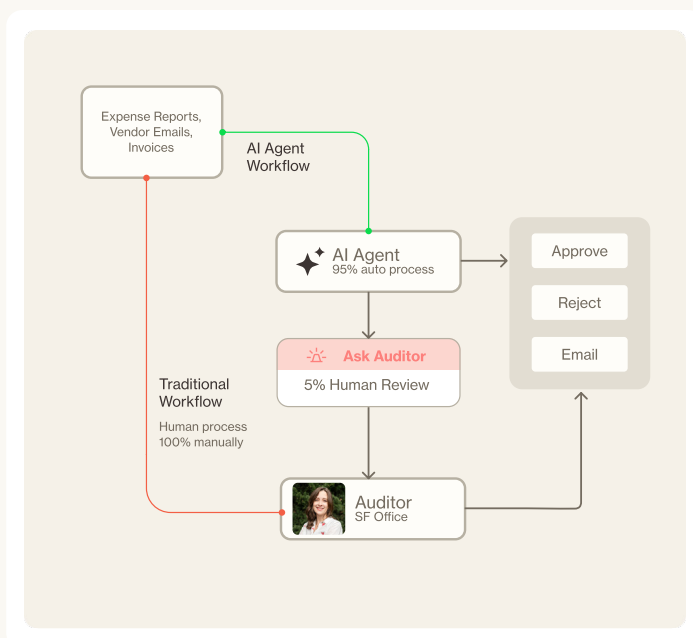
Trust and accountability are essential to any AI-driven finance operation.

Best-in-class agentic AI systems integrate human-in-the-loop mechanisms, escalating uncertain or high-risk cases to a human manager for review. This model is designed to ensure high standards of transparency, compliance, continuous improvement, and explainability throughout the accounts payable process.

Transparency is maintained by ensuring that human managers retain oversight of complex cases and exceptions. As noted earlier, AI agents can handle routine and repetitive tasks, while ambiguous or risky decisions are escalated to human professionals.

Compliance is safeguarded through having human involvement in sensitive or complex scenarios. When dealing with regulatory nuances, unusual vendor arrangements, or high-value transactions, the system is built to recognize when human oversight is necessary, so all actions align with internal policies and external regulations.

Continuous improvement is at the model's core. Each time a human corrects or overrides an AI decision, that feedback is captured, and the system learns from the feedback, adapting its behavior and improving its accuracy over time. This creates a continuous cycle of learning and improvement.



Human-in-the-loop workflow

AI agents handle routine compliance tasks, escalating edge cases to human reviewers. This feedback loop enables continuous learning while maintaining trust and accountability in finance operations.

For every item flagged or escalated by an AI agent, the system provides a detailed breakdown of the reasoning behind the decision. This includes a view of the data inputs, logic pathways, and confidence levels that led to the escalation, allowing finance teams to understand and audit the AI agent's actions.

As AI agents learn and become increasingly more reliable, the amount of human review needed will decrease. With their ability to learn, adapt, and improve with every new scenario, AI agents will, over time, be able to replicate the decision-making of your best team members.

Why agentic AI outperforms traditional automation

Traditional automation, such as RPA, macros, or static machine learning, focuses on execution. Agentic AI adds adaptation: it perceives context, makes real-time decisions, and learns from outcomes. Instead of following preset rules, agentic AI understands and adapts to changing data, policies, and SOPs. It learns from feedback rather than requiring constant human updates. It doesn't just automate tasks; it manages entire workflows and decision-making processes.

A roadmap to adoption

Agentic AI adoption is a journey. Finance leaders should set their own pace, based on their readiness and goals. Having a methodical approach is important so that the integration maximizes team value while minimizing disruption.

It begins with evaluating the current state of automation and the quality of existing SOPs. Mapping out which AP processes are already automated and assessing the clarity of documentation helps identify gaps and opportunities. Well-documented, standardized processes are essential for training AI agents effectively. Updating and refining these procedures ensures the AI has a strong foundation to operate from, setting the stage for successful deployment.

Once readiness is assessed, organizations can identify the high-volume, rules-based processes ideal for early adoption. As AI agents begin to take on operational tasks, oversight mechanisms must be established to ensure accountability. Escalation protocols should be defined, including thresholds for when human intervention is required.

The next stage is governance. This phase includes integrating compliance checks, data security protocols, and performance monitoring systems. Establishing these guardrails ensures that as AI agents take on more responsibility, they do so within a framework that aligns with regulatory requirements and organizational risk tolerance.

To maximize the potential of agentic AI, organizations should implement continuous improvement loops that capture human corrections, performance data, and process outcomes. These insights can be used to fine-tune agent behavior, improve accuracy, and expand the scope of automation to more complex tasks. Over time, this iterative refinement leads to smarter, more autonomous systems that deliver increasing value.

Celebrating and sharing early successes is vital to building trust and momentum across the organization. Demonstrating tangible improvements, such as reduced processing times, cost savings, or enhanced compliance, helps stakeholders understand the value of Agentic AI. A communication plan should be in place to highlight these wins, ensuring that leadership, finance teams, and cross-functional partners remain aligned and engaged throughout the journey.

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Your agentic AI adoption roadmap

1. Assess readiness

Evaluate current automation and SOP quality

2. Identify high-volume processes

Target rules-based, repetitive tasks first

3. Establish governance

Integrate compliance, security, and escalation protocols

4. Implement improvement loops

Capture feedback to refine agent behavior

5. Celebrate and communicate wins

Share results to build trust and momentum

Build vs. Buy: Why best-of-breed vendors lead the way

As finance organizations evaluate how to implement agentic AI, one strategic question dominates: Should we build our own agents in-house, or adopt best-of-breed vendor platforms built for finance? The answer carries implications for risk, speed, accuracy, and long-term scalability.

The allure and limitations of building in-house

Developing proprietary agents can seem attractive. It promises customization, direct control over data, and the ability to experiment with emerging AI frameworks. However, in practice, in-house builds often encounter critical barriers.

Agentic systems require advanced natural-language processing, reinforcement learning, and data orchestration expertise. Models must be retrained, validated, and monitored continuously to ensure ongoing peak performance. Custom agents must connect to ERP, procurement, and compliance systems that evolve, requiring ongoing management. All of this requires skilled and dedicated in-house resources, which many organizations do not have.

Another serious concern is AI hallucination, when a model generates inaccurate or fabricated outputs that appear plausible. Hallucinations occur when large language or reasoning models produce confident but incorrect conclusions, often because of data gaps, ambiguous instructions, or a lack of sufficient training. The potential risks are significant. In finance, a hallucination could, for example, lead to misclassifying an invoice or making an incorrect payment. Such errors can lead to financial impacts, compliance issues, or reputational damage. Vendor platforms mitigate this risk through rigorous model testing, curated data sets that use only relevant data, and human-in-the-loop controls.

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Figure 2: Build vs. Buy Comparison Table

Factor	In-House Build	Vendor Platform
Time to Value	12-24 months	Weeks to months
Expertise Required	NLP, ML, integration specialists	Finance domain knowledge
Hallucination Risk	High (requires continuous testing)	Low (pre-trained, curated datasets)
Compliance	Manual updates required	Built-in, continuously updated
Security	Build from scratch	Enterprise-grade, certified
Ongoing Costs	High (dedicated team needed)	Predictable subscription

The strategic advantage of best-of-breed platforms

Agentic AI platforms designed specifically for finance bring together domain-trained models, curated financial data sets, embedded compliance logic, and secure system integrations to deliver transformative value. These platforms offer rapid deployment through pre-trained financial intelligence, enabling organizations to realize benefits quickly without extensive customization. Their models are built on millions of real-world and relevant financial transactions, ensuring high levels of accuracy and reliability while minimizing hallucinations and false positives. Every action taken by the AI is logged and auditable, providing full transparency and traceability for regulators and auditors. Security is embedded at scale, with enterprise-grade data handling, encryption protocols, and certification frameworks that meet stringent industry standards.

These platforms also benefit from continuous improvement, as vendors retrain models using anonymized, aggregated data across their customer base. The unlocking of insights that individual enterprises would struggle to do on their own opens the door to making critical refinements to policies and processes. Ultimately, best-of-breed agentic platforms shift the burden of maintaining accuracy, governance, and resilience from internal teams to specialized partners.

“Agentic AI allows finance leaders to scale precision and insight, not just productivity. It turns data into decisions, and decisions into strategic foresight.”

Anant Kale,
CEO of AppZen

The strategic impact of agentic AI

The transformation of finance operations through AI is currently taking place. Organizations that postpone implementation risk falling behind competitors who are already reaping the benefits of AI-powered financial intelligence.

CFOs must decide between continuing with current operations that are becoming more inefficient and costly, or adopting AI-powered solutions that provide noticeable enhancements in speed, accuracy, and strategic value. It's important to note the distinction between legacy systems that have layered AI onto existing solutions – often with limited impact – and AI-first solutions, built from the ground up, that deliver truly transformative results.

AI finance solutions are now mature, proven, and ready for deployment in enterprises. Early adopters have the advantage of being the first movers in talent optimization, process efficiency, and strategic capabilities. Waiting for the technology to mature further means accepting a competitive disadvantage while rivals gain operational excellence.

AppZen brings these practices together with enterprise-grade AI, built specifically for finance teams, delivering automated audit, compliance, and security at scale while freeing CFOs and their teams to focus on strategic initiatives.

The future of accounts payable: Autonomous, intelligent, and strategic

Agentic AI is not a passing trend. It's a structural shift in how finance operations will function in the future. According to the Microsoft Work Trend Index 2025, "82% of leaders say this is a pivotal year to rethink key aspects of strategy and operations." Furthermore, 81% say they "expect agents to be moderately or extensively integrated into their company's AI strategy in the next 12-18 months."

For CFOs and finance leaders, the question is no longer if AI Agents will arrive in AP; it's how quickly they can be implemented responsibly. Early adopters will capture both operational and strategic advantage, while late adopters risk inefficiency and losing top talent. Future finance organizations will be defined by hybrid intelligence, with humans providing judgment, AI providing scale, and both together driving the next era of financial excellence.

Five key takeaways for finance leaders

1. Agentic AI represents a structural shift, not a passing trend
2. Early adopters gain competitive advantage in talent optimization and strategic capabilities
3. Best-of-breed vendor platforms deliver faster ROI with lower risk than in-house builds
4. Human-in-the-loop models ensure trust, accountability, and continuous improvement
5. Finance teams must upskill for AI oversight and strategic roles



AppZen is the leader in autonomous spend and compliance management, revolutionizing enterprise finance operations with its proprietary AI platform. Built specifically for finance, AppZen's solutions accurately automate expense audits, card audits, and invoice processing. They integrate seamlessly into your existing processes and learn from your workflows to drive operational efficiencies, improve compliance, and help your business grow. Empower your AP, T&E, and Card teams to transform your business with AI. Learn why the world's largest companies trust AppZen's AI platform to automate their finance operations. Visit www.appzen.com today.