ERP meets AI

Fortune favors the bold

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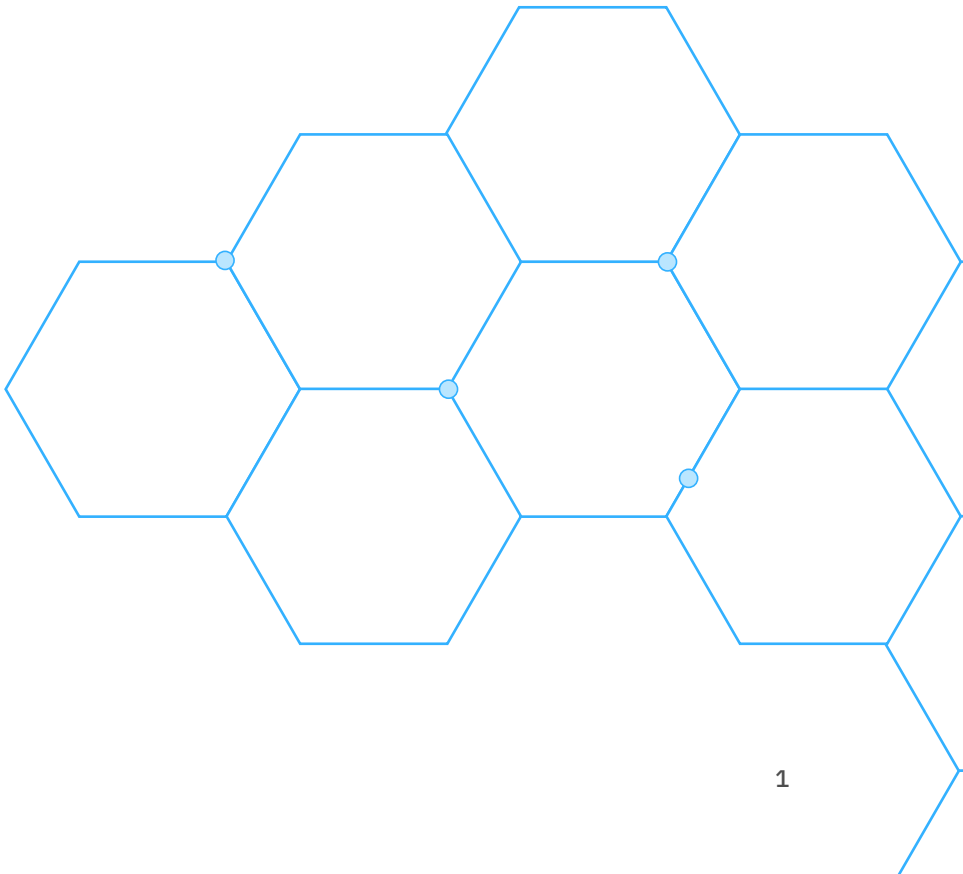

Foreword

If we've crossed paths at a recent conference, grabbed a coffee together in the past year, or even just exchanged a quick email lately, chances are our conversation focused on the ever-evolving world of ERP. But lately, the focus of our chats has shifted. It's no longer just about the nuts and bolts of enterprise resource planning. It's about the spark – the electrifying potential of artificial intelligence to breathe new life into these foundational systems. And the ERP platform as a lever to deliver truly enterprise-wide AI solutions.

For the past year and a half, the questions flooding my inbox and echoed in meeting rooms have centered on the "how" of AI. How do we unlock the treasure trove of data within our ERP to fuel the gen AI revolution? How do we use our ERP platform to seed and grow AI's positive results throughout the organization?

My global team and I have been working with clients—sharing anecdotes, outlining best practices, and trying to provide tangible answers. But with this report, we wanted to zoom out, to take a bird's-eye view of the landscape. What we discovered, and what we're genuinely thrilled to share, is a compelling narrative of risk and reward.

The companies that have embraced ERP-driven AI with courage and conviction are already reaping significant rewards. They're not just tinkering; they're transforming. And for those still on the sidelines, a word of caution: the chasm between the bold and the hesitant is widening rapidly. This isn't a wait-and-see moment; it's a call to action.

My own excitement about this isn't theoretical. I've witnessed firsthand the profound impact that well-executed ERP-AI initiatives have on an organization's bottom line and, more importantly, on their ability to achieve the most ambitious goals. While many of the best examples of ERP-driven AI are kept to private conversations, this report isn't just data and analysis; it's a glimpse into a future I believe is not only possible but already unfolding.

Stacy Short
Strategic SAP Partnership Leader, IBM

Key takeaways

"The chasm between the bold and the hesitant is widening rapidly. This isn't a wait-and-see moment."

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For enterprise AI, bold leaps beat piecemeal projects

Organizations that aggressively integrate AI into their enterprise systems via an ERP platform are not only outperforming their more risk-averse peers—they are reshaping industries. Those bullish on AI see 27% higher ROI and 9% stronger operating margins.

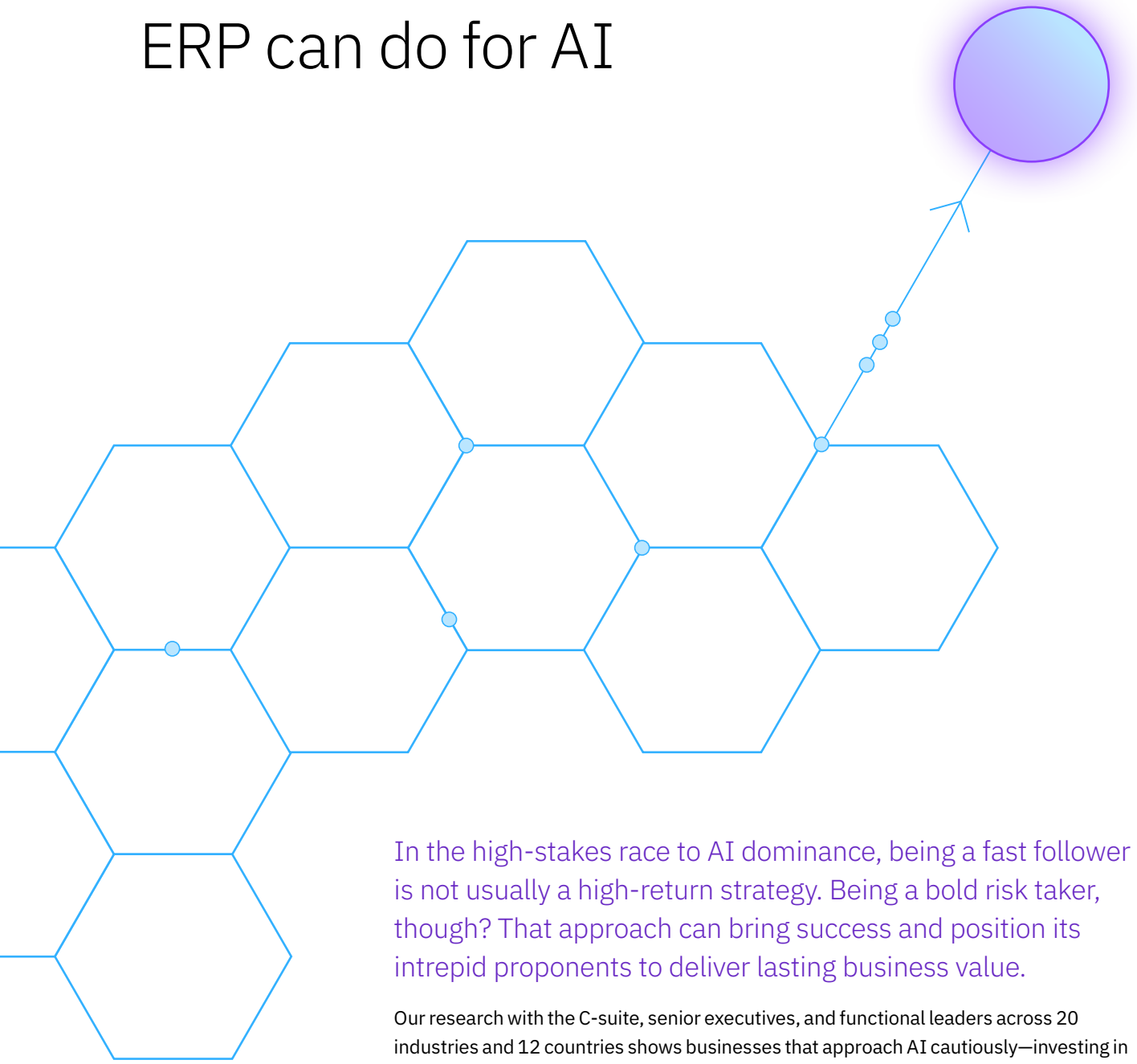
You can improve—or even better—you can transform.

Enterprise leaders who use AI to transform have executed 80% more enterprise AI and gen AI projects and report 4.4x more integration of AI processes with their ERP platform. The bullish approach—bold and deliberate—means these organizations are capturing benefits more quickly,

The secret to scaling AI across the enterprise is hiding in plain sight: the ERP platform.

78% of the AI bullish also plan to expand their use of AI into more strategic domains in 2025. 82% of the AI bullish expect enterprise functional processes to be changed by AI and generative AI in the next year. For the AI bearish, the average is just 31%.

What a bold shot of ERP can do for AI



In the high-stakes race to AI dominance, being a fast follower is not usually a high-return strategy. Being a bold risk taker, though? That approach can bring success and position its intrepid proponents to deliver lasting business value.

Our research with the C-suite, senior executives, and functional leaders across 20 industries and 12 countries shows businesses that approach AI cautiously—investing in piecemeal projects, limiting exposure to risk, and treating it as a tool for incremental gains—do see positive returns. But they are lagging those that treat AI as a transformational technology and took intentional, if significant, risks.

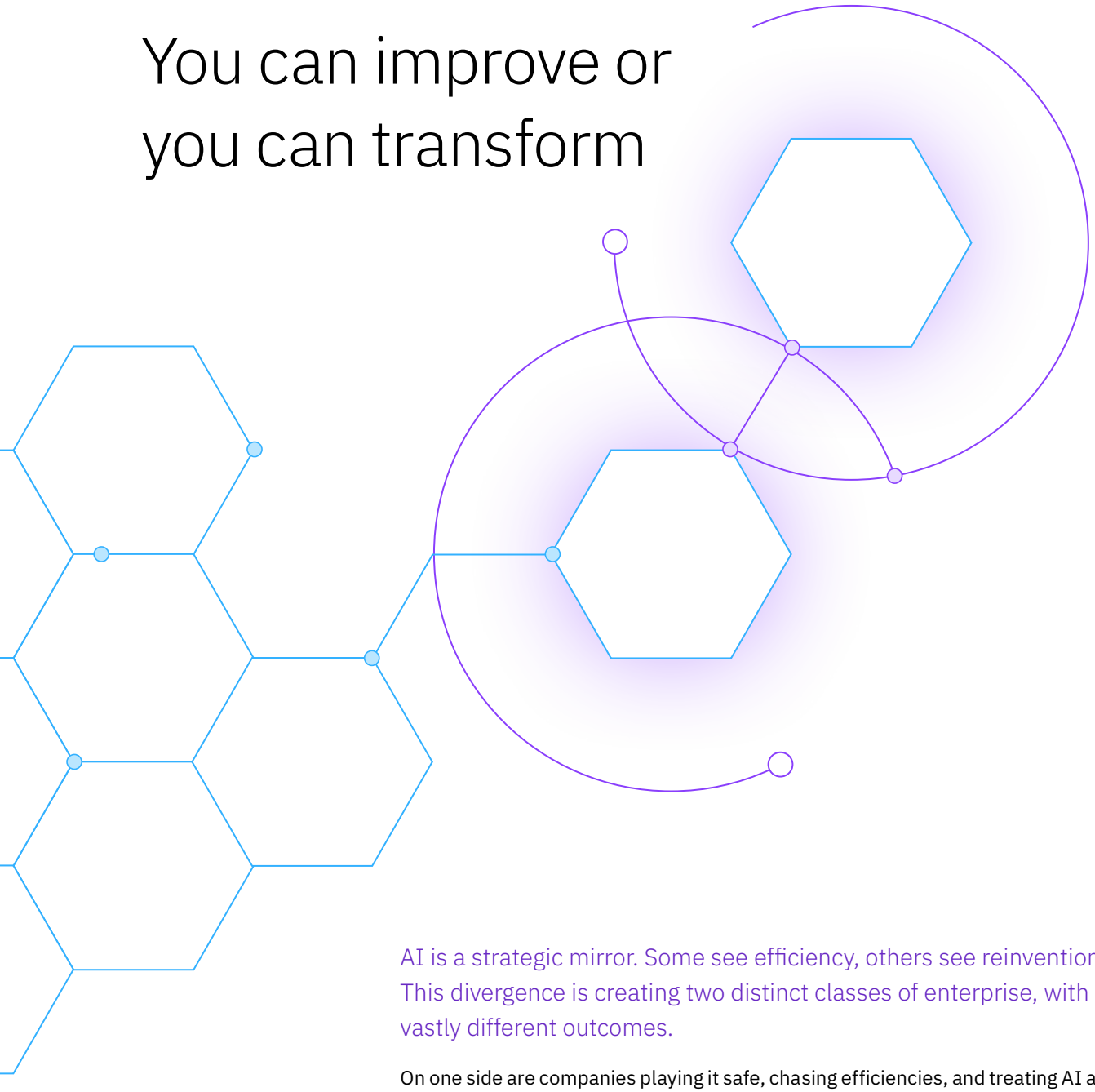
Being a fast follower often brings advantage when a technology hits the mainstream. But in the case of AI, fast followers should bridge the performance gap now or the learning curve will only get steeper as new AI innovations are introduced.

Multiple levers can help enterprises move fast with purpose more rapidly and holistically, but our data shows an ERP platform is very effective. Organizations that aggressively integrate AI into their enterprise systems via an ERP platform are not only outperforming their more risk-averse peers—they are reshaping how they compete. Those bullish on enterprise AI via an ERP platform see 27% higher ROI and 9% stronger operating margins. Their success is not accidental; it is the result of deliberate and decisive action to embed AI deep within the foundational layers of their ERP.

Higher returns, better operating margins for the bold

Organizations that want to be enterprise AI leaders—"Enterprise AI Bullish"—are already enjoying significantly better performance than those who are adopting more conservative strategies—the "Enterprise AI Bearish"

You can improve or you can transform



AI is a strategic mirror. Some see efficiency, others see reinvention. This divergence is creating two distinct classes of enterprise, with vastly different outcomes.

On one side are companies playing it safe, chasing efficiencies, and treating AI as a tool for cost reduction. These AI-bearish entities take a fast follower approach, but mostly in the least risky areas. Although many now see AI and gen AI as having significant cross-enterprise potential, many started their efforts in discrete silos; 56% have applied AI and gen AI to mostly back-office functions.

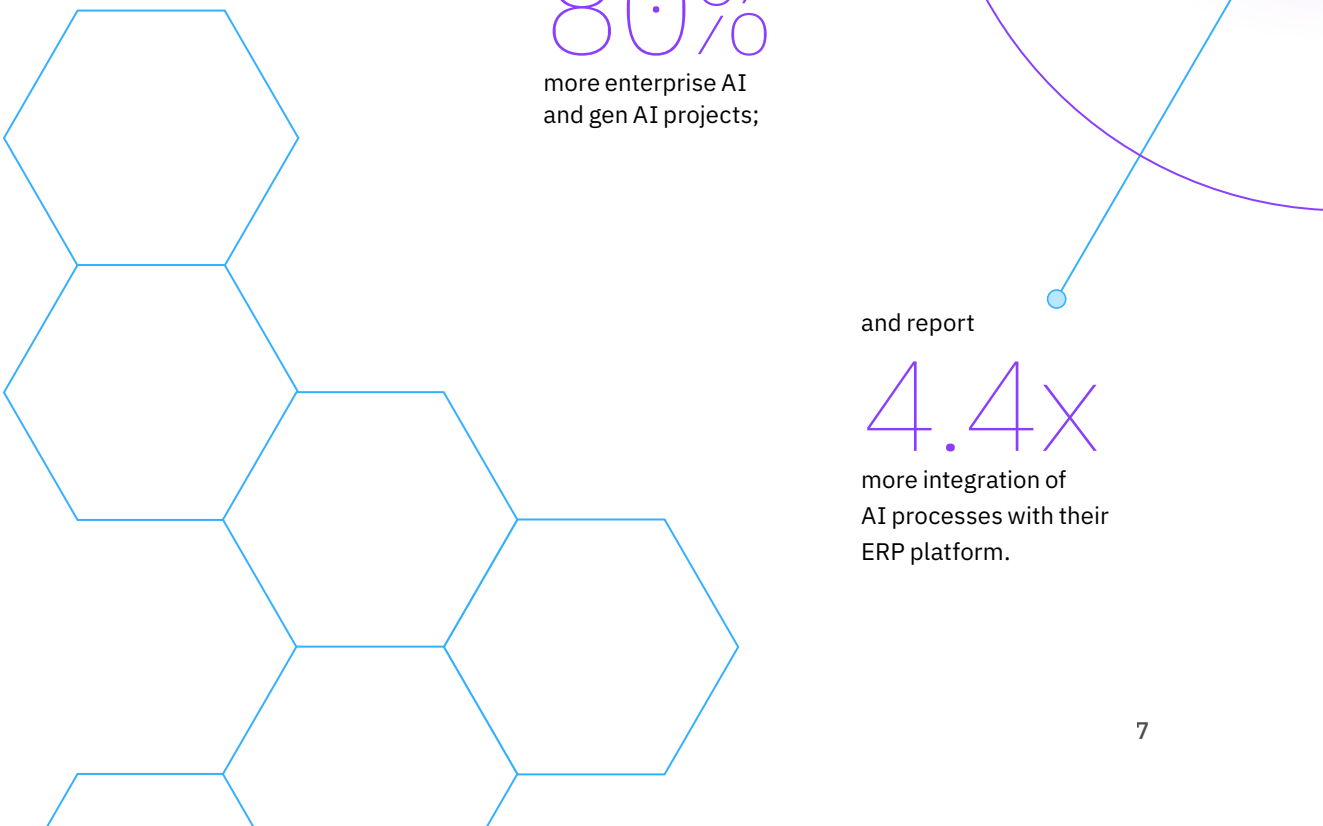
On the other side are organizations, the AI bullish, taking bold steps to deploy enterprise AI across diverse business functions, aiming for business transformation.

The data paints a clear picture. Enterprise leaders who use AI to transform:

– have executed 80% more enterprise AI and gen AI projects.

– report 4.4x more integration of AI processes with their ERP platform.

The bullish approach—bold and deliberate—means these organizations are capturing benefits more quickly, accelerating platform modernization, and planning to expand AI into strategic areas beyond the back-office.



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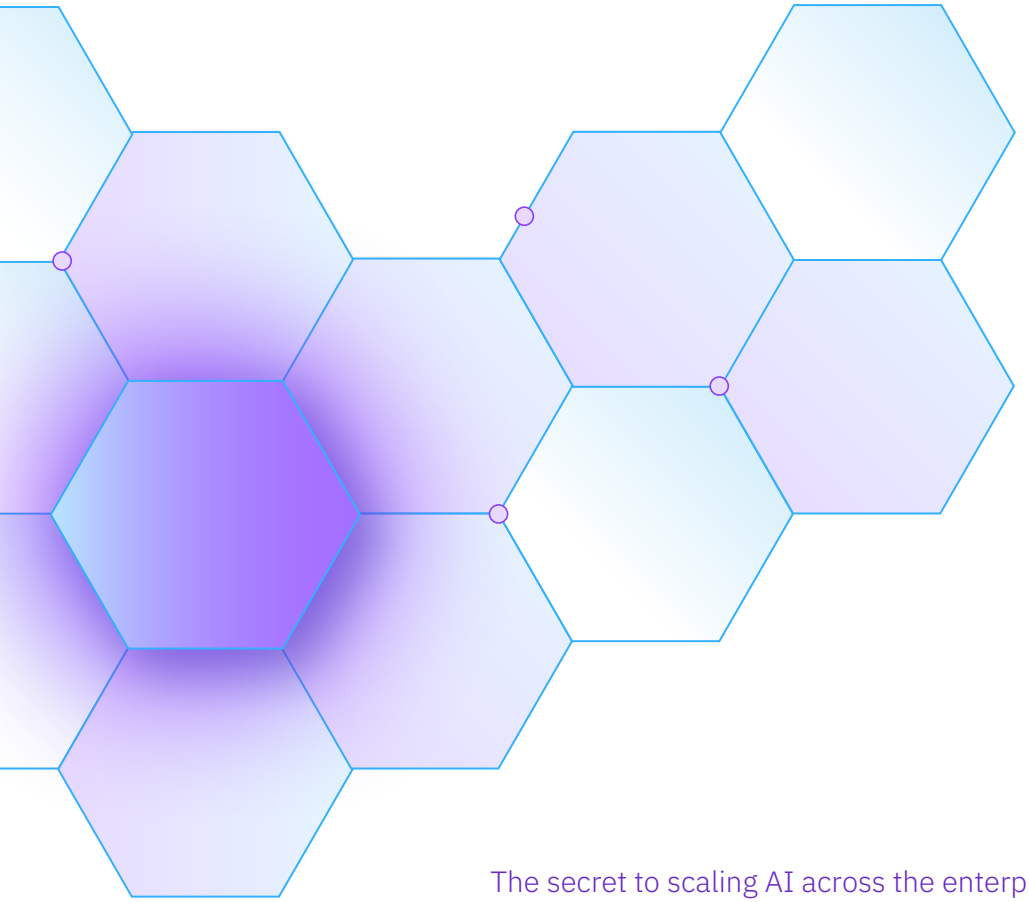
Why ERP platforms are key to AI success



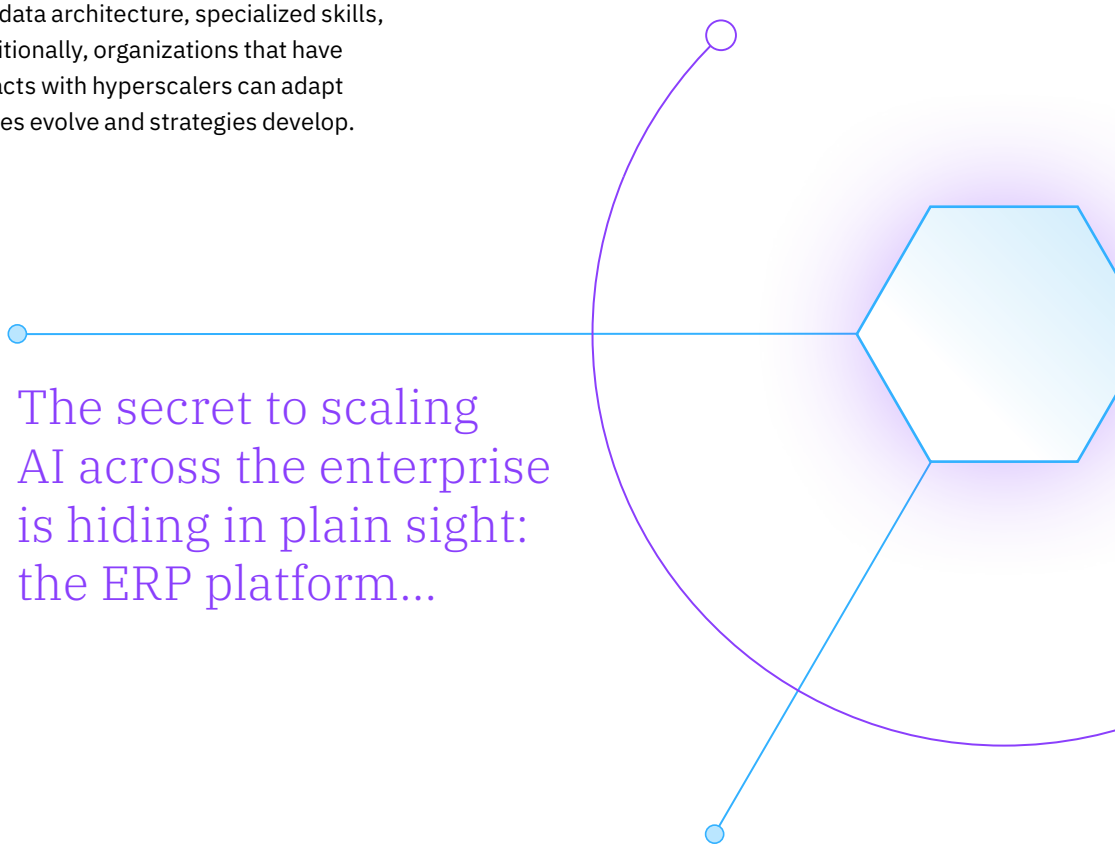
The secret to scaling AI across the enterprise is hiding in plain sight: the ERP platform.

A modern ERP platform is not just a repository of an organization's most trusted data or a tool for operational efficiency—it is the beating heart of enterprise AI strategy. By integrating AI directly into enterprise systems, companies can leverage their data at scale, automate workflows, and unlock insights that drive differentiation.

AI is a corporate muscle—the more it gets used, the stronger it gets. ERP platforms enable regular, widespread use of AI in a way few other solutions can. Enterprises boldly using AI for transformation have a larger share of their enterprise platform users engaged in the use of AI and gen AI in their day-to-day tasks—especially in finance, with 40% for the bulls and just 24% for the bears.

Consider this: across process areas, on average, 82% of the AI bullish expect enterprise functional processes to be changed by AI and gen AI in the next year. For the bearish, the average is just 31%. As importantly, in 2025, 78% of the AI bullish also plan to expand their use of AI into more strategic domains using their ERP platforms, recognizing that these platforms are not the destination but the starting point.

Yet, for many organizations, the path to enterprise AI remains obstructed. While 69% plan to apply generative AI to enterprise platform data and systems in the next three years, nearly a third admit that their current architecture is impeding progress. Enterprise AI is not a plug-and-play solution; it demands robust data architecture, specialized skills, and sound governance. Additionally, organizations that have implemented flexible contracts with hyperscalers can adapt more quickly as their priorities evolve and strategies develop.



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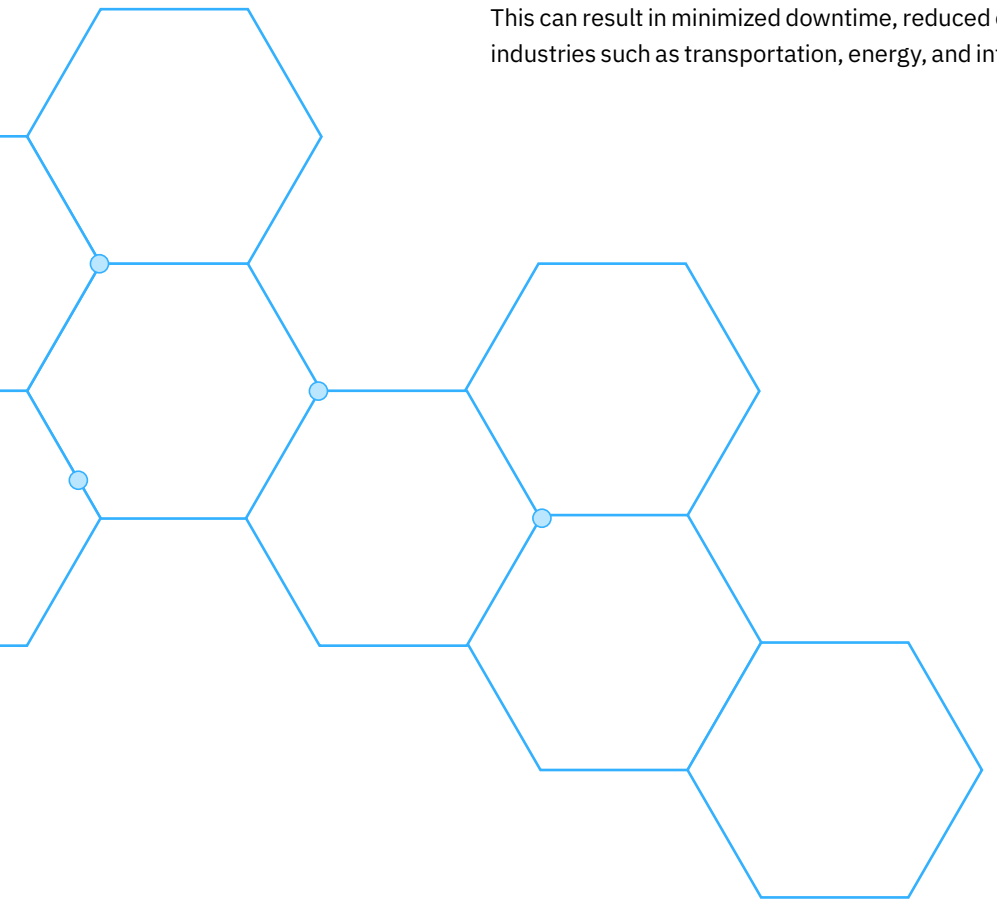
Beyond automation: How AI is rewriting the ERP playbook

Traditional ERPs are increasingly seen as static, reactive tools that store and process data according to predefined rules and processes. But with the integration of AI, ERPs become dynamic engines of strategic insight.

Imagine an ERP that doesn't just record transactions, but anticipates them. An ERP that doesn't just report on past performance, but predicts future outcomes, or better yet, suggests actions that could lead to an even stronger result. This is the promise of AI-powered ERP, where machine learning, natural language processing, and predictive analytics coalesce to create an intelligent platform. No longer a static piece of software, the ERP becomes a living, learning system, capable of optimizing processes in real-time and uncovering hidden opportunities—particularly as ERP platform providers rapidly scale the number of available AI solutions.

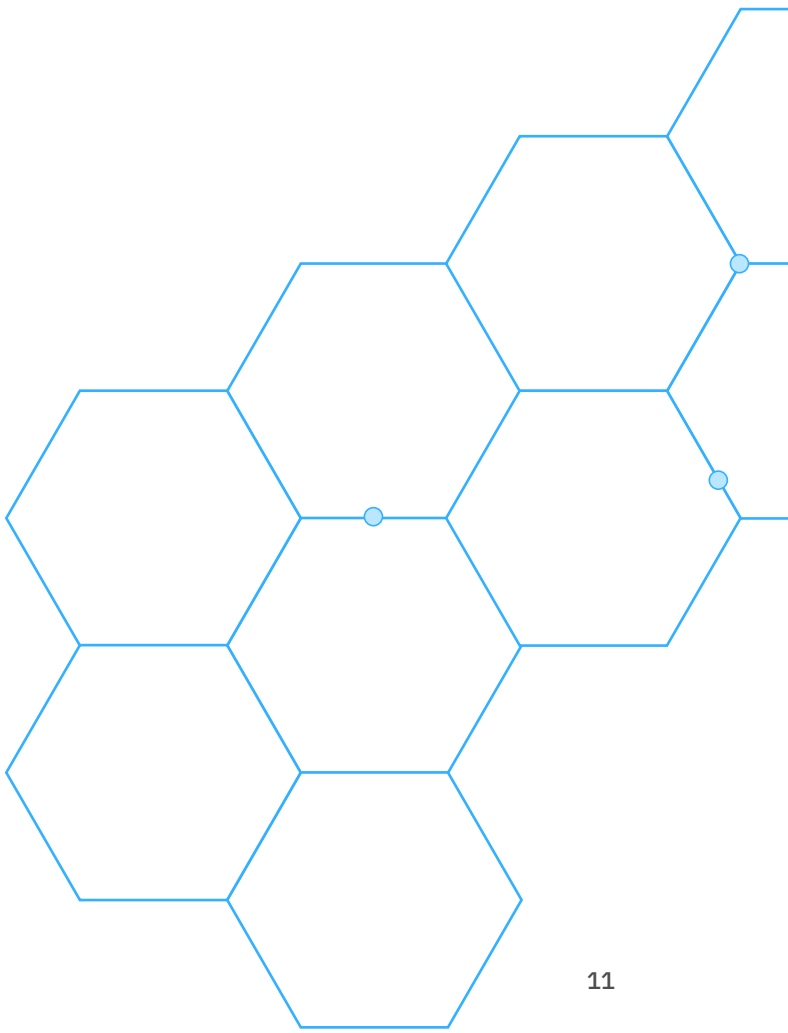
The applications of AI in ERPs are as diverse as they are impactful. Consider **predictive maintenance**, where IoT sensors and digital twins feed data into AI algorithms, enabling organizations to anticipate equipment failures and schedule maintenance proactively. This can result in minimized downtime, reduced costs, and enhanced safety—crucial for industries such as transportation, energy, and infrastructure.



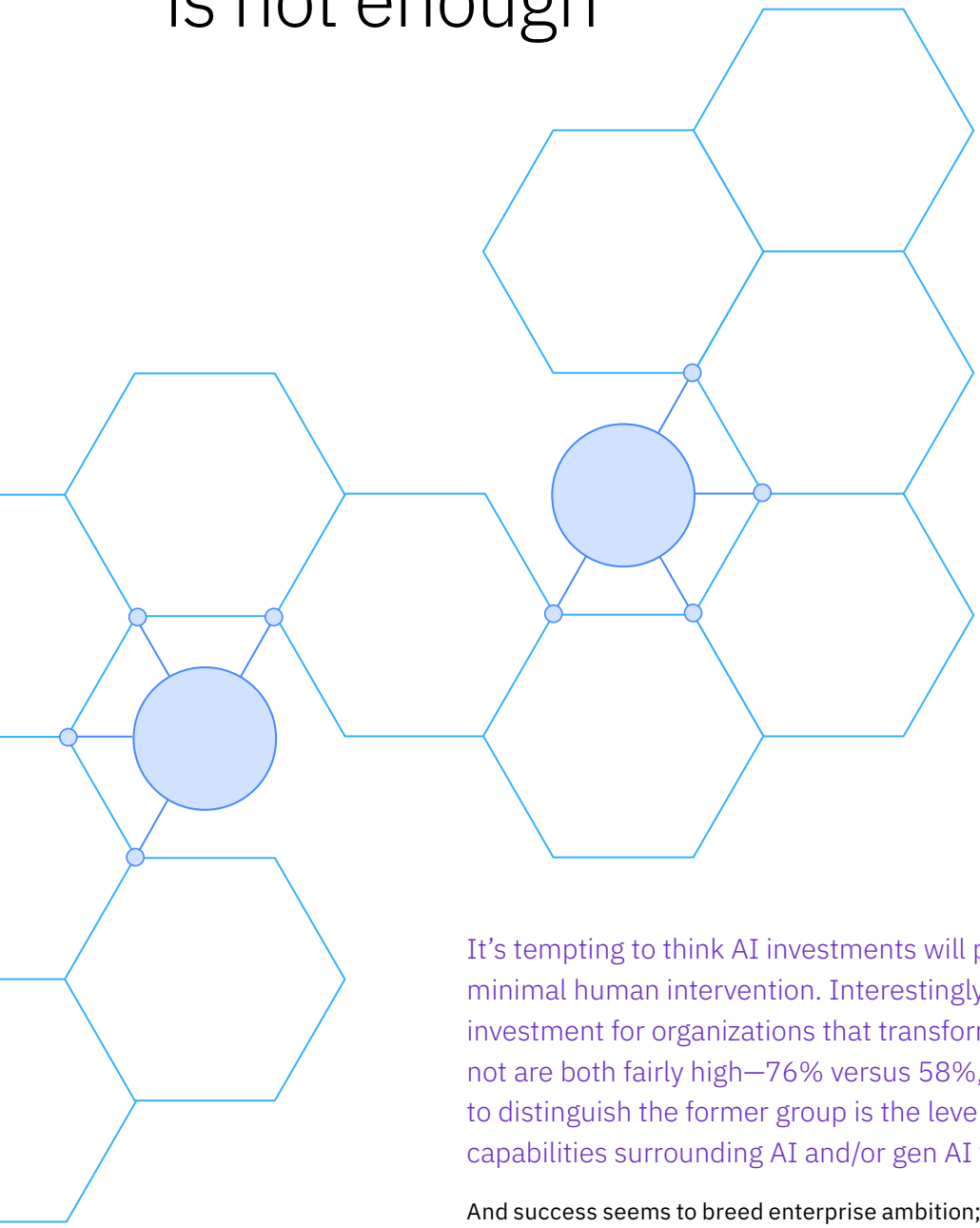
In **demand forecasting and spend management**, AI empowers businesses to anticipate and better respond to market fluctuations. By analyzing historical data and external factors, AI-driven ERPs can optimize inventory levels, help prevent stockouts, and refine cash flow projections.

Human resources management is also undergoing a transformation. AI-powered human capital management (HCM) modules automate routine tasks, personalize employee learning, and optimize talent acquisition.

Finally, in **order and supply chain management**, AI can optimize every aspect of the fulfillment process, from route planning to customer communication. Platforms demonstrate how AI can unify data streams, anticipate disruptions, and enhance supply chain resilience.



Investment alone is not enough

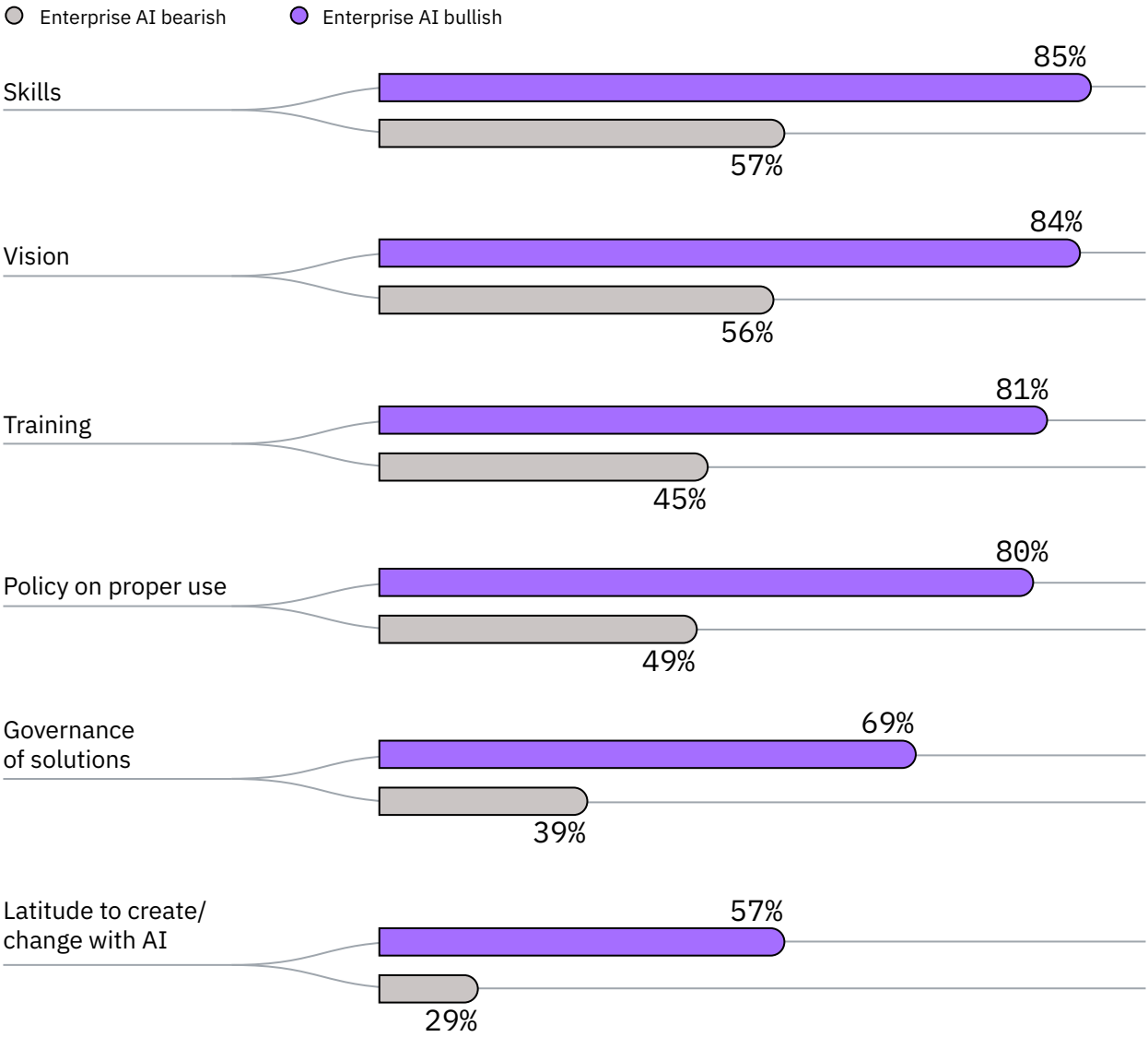


It's tempting to think AI investments will pay for themselves with minimal human intervention. Interestingly, though, the level of AI investment for organizations that transform versus those who do not are both fairly high—76% versus 58%, respectively. What seems to distinguish the former group is the level of enterprise execution capabilities surrounding AI and/or gen AI for the ERP platform.

And success seems to breed enterprise ambition; 98% of the AI-fervent plan to apply gen AI tools to enterprise platform data, systems, or processes extensively to all or most areas in the next three years. Only 40% of their less enthusiastic counterparts plan to do the same.

Figure 1

Beyond investment: The AI bullish are building strong internal support



Building your organization's AI muscle requires discipline and commitment. Rapid, enterprise-wide deployment fuels the experience needed to unlock gen AI's transformative power. However, growth demands careful management. Without rigorous governance, the risks of data breaches, algorithmic bias, and operational inefficiencies could derail even the most promising initiatives.

Sound governance is not about stifling innovation; it's about creating guardrails that empower organizations to innovate responsibly at scale. It helps ensure that AI aligns with strategic objectives, complies with ethical standards, and scales effectively across the enterprise.

Equally important are the skills and expertise required to manage and execute AI projects. Among the enterprise AI bullish, 98% agree they have the right skills to extract immediate value from AI. This confidence is backed by investments in training, recruitment, and the development of industry-specific AI capabilities.

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Be bold—but wise

Organizations that have jumped into enterprise AI are not doing so brashly or without some foresight. For example, 87% to 96% of the bold enterprises are taking concrete and meaningful actions to mitigate enterprise AI risks. Their slower, more hesitant counterparts share their concerns about enterprise AI, but are less likely to be taking actions to change the risk profile of their AI programs.

Figure 2

Bold but prudent: How the AI bullish are mitigating related risk

Perspective

Galp Energia's AI-powered ERP revolution

Fueling a customer-centric future

Galp Energia, a Portuguese multinational energy corporation, has embarked on a bold digital transformation leveraging the power of AI-driven workflows within a modern ERP system. The company is using SAP S/4HANA to redefine its operational landscape and customer engagement. This strategic move, beginning with a pivotal proof-of-concept in the Azores and Madeira, shows how ERP and AI can drive tangible business value.

The challenge was significant. Galp's legacy SAP ERP systems, heavily customized over years, hindered agility and responsiveness. Catarina Ceitil, Galp's Head of ERP Transformation Program, is spearheading this revolution. She acknowledges, "Even making a small change... could require up to six months of work." To address this, Galp is breaking down operational silos, creating integrated business units that offer a unified customer experience. This consolidation simplifies interactions, reduces complexity, and strengthens customer relationships.

Empowering frontline employees

By deploying SAP Fiori mobile applications, Galp is empowering its frontline employees at gas stations and convenience stores, streamlining critical tasks like inventory management and maintenance requests. This isn't just about efficiency; it's about responsiveness. The real game-changer lies in the integration of real-time point-of-sale data, enabling AI algorithms to dynamically optimize product mixes based on granular customer buying patterns. This predictive capability helps ensure shelves are always stocked with desired products, fostering loyalty and driving sales—a crucial competitive edge in today's hyper-competitive retail environment.

Embedding AI-powered workflows

The impact extends beyond B2C operations. Galp is dismantling legacy manual processes in its B2B division, replacing them with automated, AI-powered workflows. The results are striking: a 75% increase in straight-through invoice processing. This automation isn't just about cost reduction; it's about liberating human capital, allowing employees to focus on strategic, value-added activities. The overwhelming positive feedback, with 76% of back-office users reporting project success, underscores the transformative power of this initiative.

Enabling customer centricity

Galp's vision transcends immediate operational improvements. The company is strategically positioning itself for the future of energy, building a robust digital foundation to support its shift from product-centric to customer-centric services. This transformation is crucial as the energy sector navigates the complexities of the global energy transition.

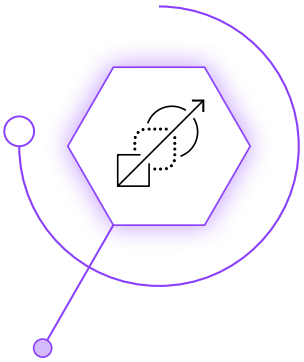
Looking ahead, Galp is focused on scaling this success globally. The adoption of hybrid agile methodologies, combining iterative sprints with structured waterfall approaches, will accelerate the rollout. The ability to rapidly upgrade and adapt, as evidenced by the 10-week SAP S/4HANA upgrade, signifies a new era of agility for Galp.

Galp's journey is a testament to the power of AI-driven ERP transformation. By leveraging intelligent workflows and data-driven insights, the company is not only streamlining operations but also redefining customer engagement. This strategic move positions Galp as a leader in the evolving energy landscape, demonstrating how technology can be a powerful catalyst for sustainable growth and customer loyalty. They are not merely adapting to the future of energy; they are actively shaping it.

Action Guide

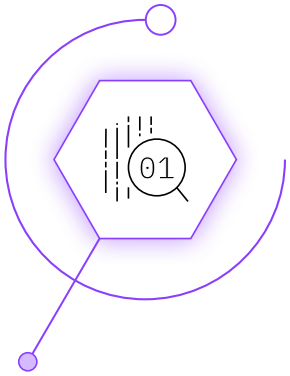
How to go bold with enterprise AI in ERP

To dominate the AI-driven future, organizations must move beyond incremental improvements and embrace enterprise-wide transformation. This effort goes far beyond automating a few workflows; it's a bold fundamental rewiring of the enterprise. Imagine a company where every decision, every interaction, every innovation is infused with intelligent autonomy. This isn't about improving—it's about transforming. Here are a few suggestions on where to begin:



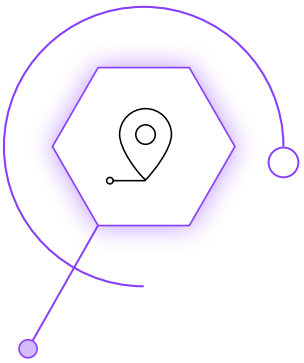
Deploy AI process reinvention squads for a zero-touch transformation of your ERP system.

Zero-touch transformation squads are specialized teams tasked with embedding AI directly into your enterprise platform. Their mission? To unlock hidden value streams and create competitive advantages you haven't even imagined, without requiring human intervention. Start with your high-value and/or high-pain areas. High-value areas directly impact revenue, cost, or customer satisfaction. High-pain areas show up with manual bottlenecks, data inconsistencies, or slow response times. Think: AI-driven dynamic pricing, personalized customer journeys, and real-time risk assessments, all orchestrated through your ERP. This is how you transform your core system from a cost center to a profit center.



Your ERP is a data goldmine. Mine it with AI and deploy it to deliver high-value ERP-enabled AI use cases.

ERP systems, by their nature, collect and store data from virtually every aspect of a business: finance, supply chain, manufacturing, sales, HR, and more. This creates a holistic view of the organization's operations, providing a rich source of information for analysis. ERP systems also typically retain data over long periods, creating valuable historical records. This historical data is essential for identifying trends, patterns, and anomalies that can inform future decisions. This provides a rich basis for AI predictive analysis, customer personalization, process optimization, and more. Deploying AI to and through the ERP system helps ensure that your AI program is being optimized to scale AI across the enterprise.



Use your ERP platform as the AI starting point, not the endpoint.

Move beyond back-office applications. Leverage enterprise platforms to apply AI in areas such as customer experience, product innovation, and market strategy. Use ERP data as a bridge to train AI models that personalize customer experiences, uncover emerging market opportunities, and accelerate innovation cycles.

The era of AI hesitation is over. Risk mitigation may deliver short-term gains, but it will not secure long-term dominance. Organizations that limit their use of AI to isolated use cases and incremental improvements are being decisively outpaced by those who go bold.

To thrive in the AI era, businesses must embed AI deep within their enterprise systems, leverage modern platforms, and invest relentlessly in skills and governance. This is not just about staying competitive; it's about reshaping industries and redefining success.

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Research methodology

The IBM Institute for Business Value (IBM IBV), in cooperation with Oxford Economics, conducted a survey of global executives whose organizations use SAP as their Enterprise Resource Planning (ERP) platform. The survey was conducted between January 2025 and March 2025 and focused on how organizations are applying AI and generative AI tools in the context of their ERP platforms and data. The survey of 1,500 director-level and above executives in North America, Latin America, Europe, Middle East, as well as Asia and Australia, focused on understanding how SAP is used to improve performance within ERP functions as well as what plans have been put in place to extend these benefits beyond the ERP platform.

Respondents were categorized according to their responses to questions about the role their organization planned to play in the application of AI to SAP data and systems, with one group (50% of respondents) aspiring to be leaders in the application of AI to SAP data and solutions, and the second group (50% of respondents), planning to adopt a fast-follower strategy. An ANOVA (Analysis of Variance) was done to compare the means of the two groups to determine if there was a statistically significant difference between them. Further analysis was conducted to understand the key difference in responses between these distinct groups.

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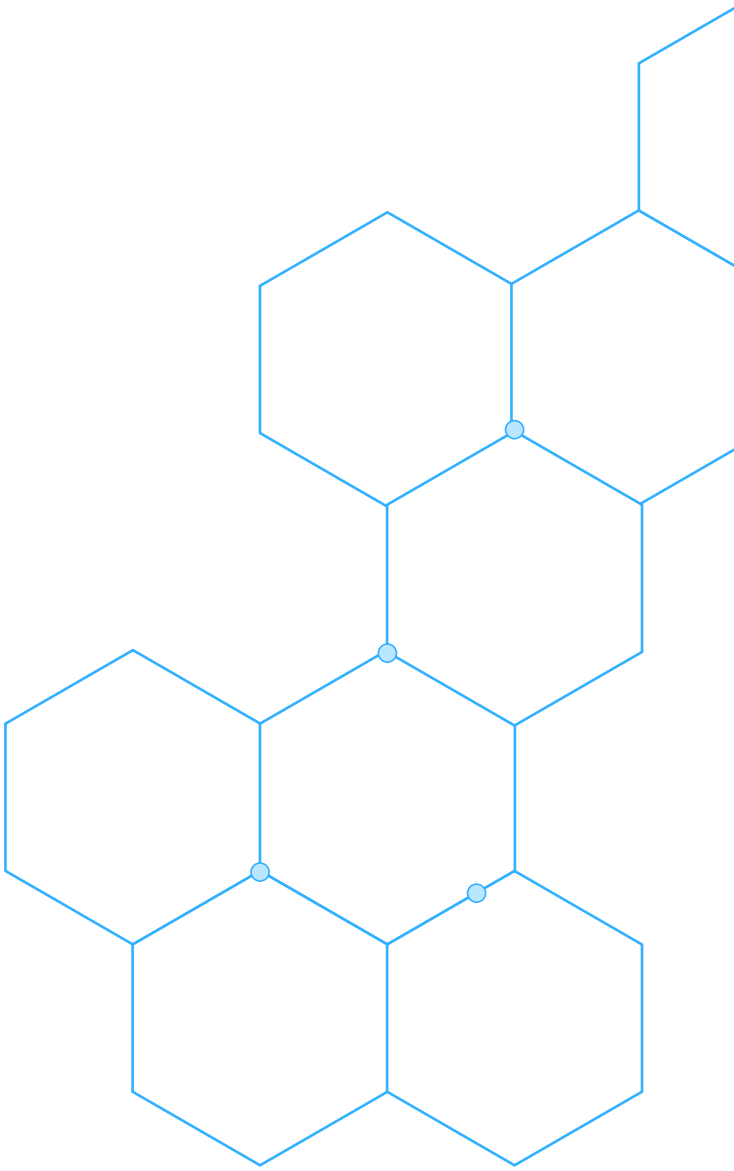

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