

ORACLE

10 Ways AI Will Deliver Business Value in 2025—and Beyond

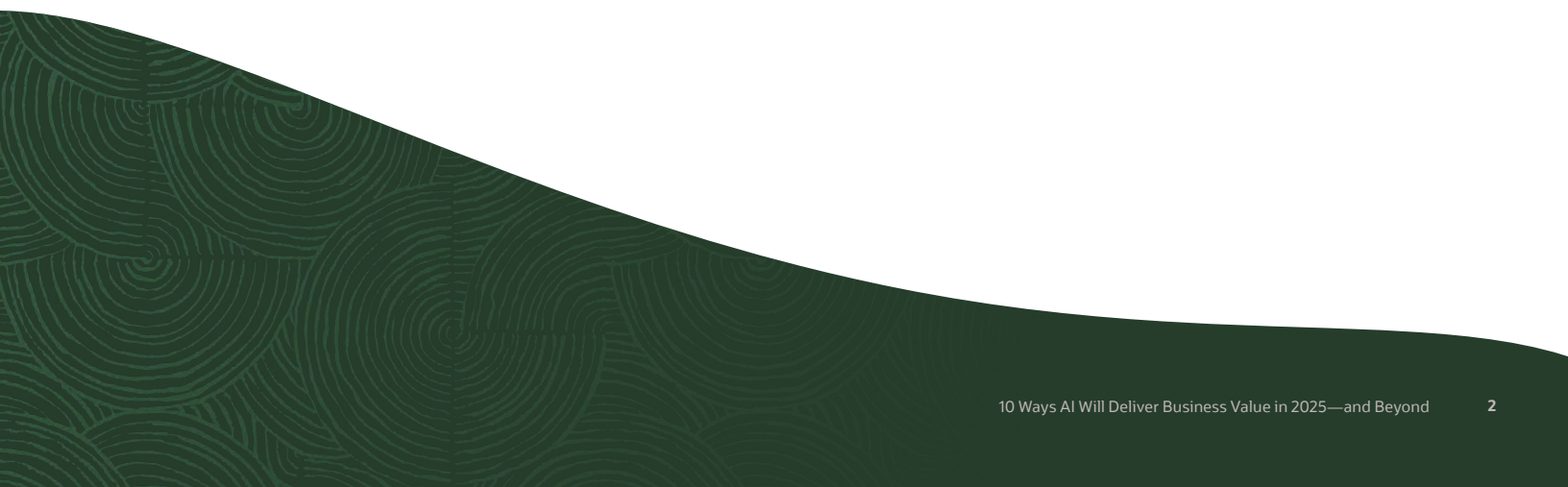
Are you ready to future-proof your organization?
Start here.





Table of Contents

Ready to get the AI advantage?	3
AI agents step up	4
1. Draft a wide range of important documents	5
2. Turn notes and summaries into action plans	6
3. Chatbots evolve into empowered service agents	7
4. AI agents will explain anomalies	8
Built-in AI delivers	9
5. Developers deliver better code, faster	10
6. Business units become more strategic	11
7. Security teams can be more effective	12
Data use improves	13
8. Smart software becomes more useful because it understands context	14
Vectors: AI's superpower	15
9. Agents grow more relevant as they leverage GenAI, ML, and data analytics ..	16
10. AI works to unify your structured and unstructured data	17





Ready to get the AI advantage?

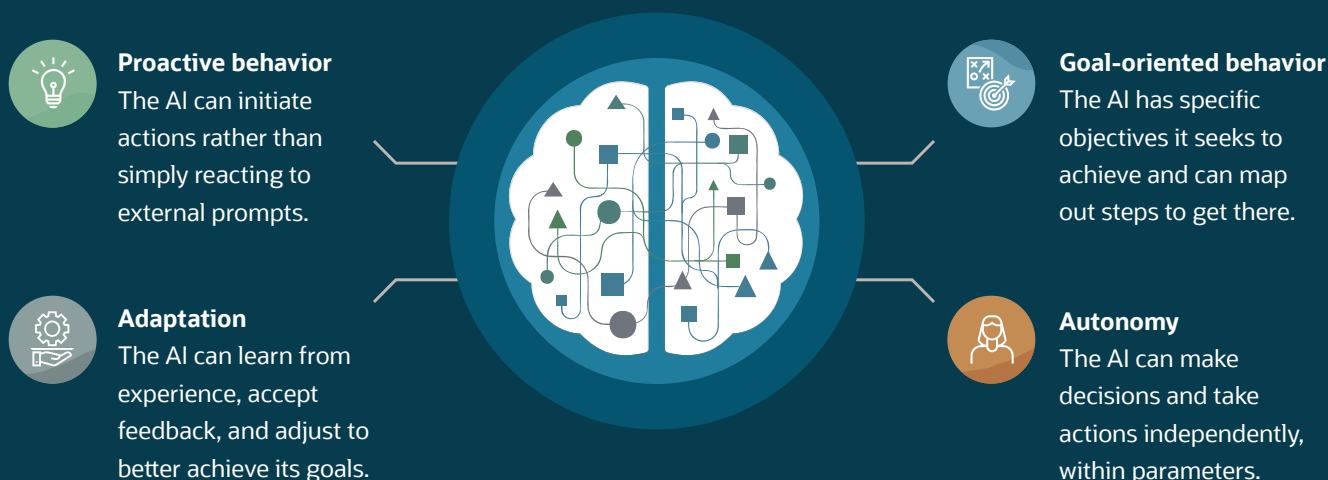
The speed at which generative AI has become a presence in our everyday lives is astonishing—it burst onto the scene just a few years ago with the release of tools such as ChatGPT and Perplexity, and now it’s everywhere. There’s Apple Intelligence in new iPhones, AI-generated summaries in Google search results, AI-powered chatbots on seemingly every ecommerce website, and the list goes on.

Business applications, while not receiving the same mainstream attention, are also benefiting. Late last year the term “agentic” went viral, referring to technologies that use large language models (LLMs) and other AI capabilities to query corporate information and take context-appropriate actions. That’s only one way AI can make business units more productive and data more useful and accessible using technology that’s available today—and in many cases, already running in your organization.

Just add imagination, because if you can envision a use case, odds are the means to execute are within your grasp.

AI agents step up

AI agents are software entities that use LLMs for general knowledge and, ideally, tap retrieval-augmented generation (RAG) for organization-specific insights.



These agents, often running inside your enterprise's front-office and back-end applications and databases, can be assigned tasks, continuously monitor data inputs, examine their environments, take actions as prescribed by their roles and instructions, enlist other agents and software tools, and fine-tune results based on their experiences.

And, instead of relying on keyword triggers or precoded business rules and workflows, AI agents can talk to people—employees, customers, partners—using natural language. With contextual reasoning, they adapt to novel scenarios, understand individuals' roles, and respond to spoken prompts.

In 2025, AI agents will improve organizational efficiency and accuracy and help inform complex decisions. Here are just some ways that will happen.

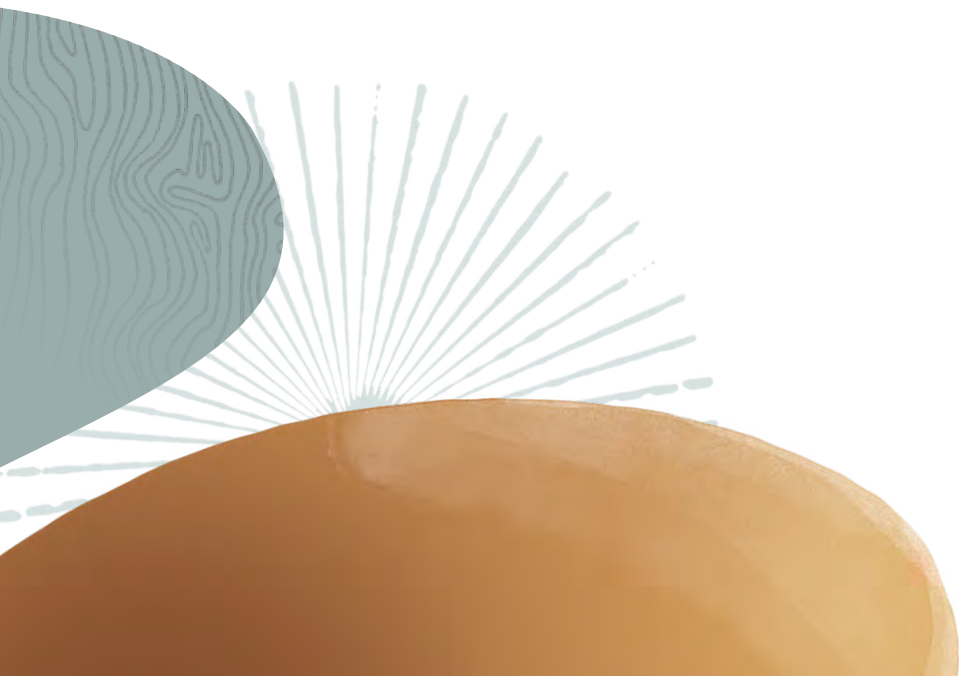
1

Draft a wide range of important documents

AI can craft emails for humans to review, approve, and send. AI agents, with their tighter integration with business applications, can go further, rapidly drafting more complex and contextual documents in areas including HR, inventory, finance, and customer service. Potential use cases include personnel reviews, sales proposals, supplier contracts, marketing presentations, business briefs, financial disclosures, and product documentation. What's more, agents can produce those documents in a variety of languages and formats.

What makes that work? The combination of LLMs, which understand language and document formats, and RAG, which brings the specific business data in your spreadsheets, database tables, and PDFs. Now AI agents can create proprietary materials from scratch and provide timely and accurate revisions to documents in need of updates.

Look for GenAI to draft visualizations, such as tables, pie charts, and line graphs, and generate text for your web pages, such as H1 and H2 headings and SEO keywords—perhaps without needing explicit instructions. Simply tell the agent what type of document to create and what you'd like to see included. Review the drafts and ask for revisions until the results are exactly what you want.



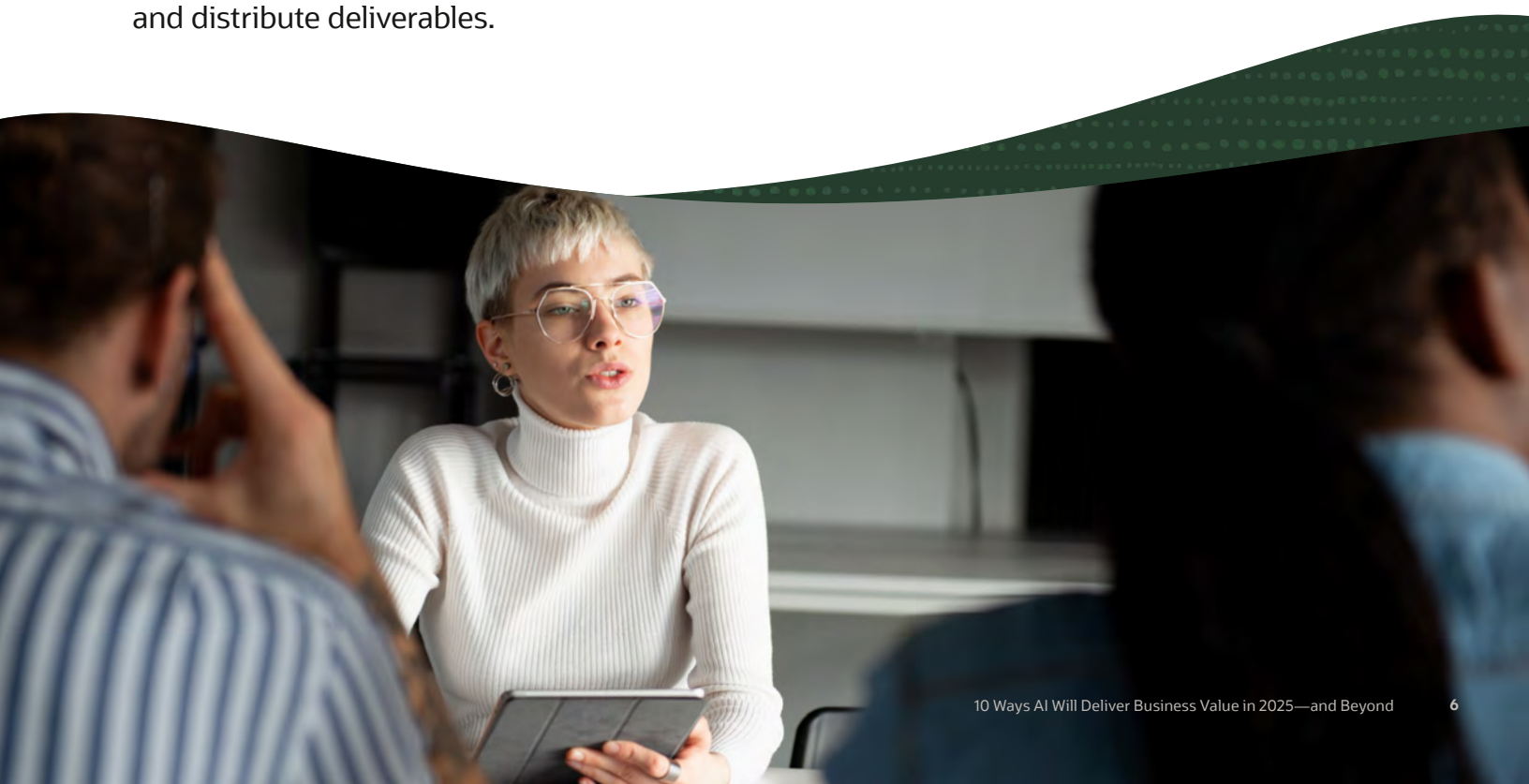
2 Turn notes and summaries into action plans

Taking notes during a video call and providing a transcript and summary? That's so 2024.

In 2025, expect speech recognition combined with generative AI agents to act less like a stenographer and more like an executive assistant—or a project manager.

GenAI can turn those meeting notes into action items, often with assigned stakeholders, deadlines, and other workflow aids. Expect to see agents create messaging groups with the appropriate participants, configure shared storage, set milestone metrics, and even schedule meetings. Because agents may have access to documents and collaboration platforms, such as SharePoint or Slack, they can help keep the project moving and check that important items don't fall through the cracks.

Your team approves proposed action plans and timelines and adds additional instructions and context as needed and benefits from an AI assistant that can help gather information and distribute deliverables.



3

Chatbots evolve into empowered service agents

You ask a chatbot for assistance, and often it offers only the most superficial advice—and then refers you to a website or human to schedule the appointment, process the payment, cancel the transaction, or tell you how to restart your specific cable modem.

AI service agents will have knowledge about products, services, and customers, so when you ask how to reset your modem, it can verify which one you have and access that exact model's tech specs and manual to provide step-by-step directions. If you need a replacement modem shipped to you, it can process that order autonomously.

Advances in speech recognition and translation let your employees and customers interact with agents via spoken language.

AI can often handle nuances in dialect and pronunciation better than humans while using knowledge about previous calls and a customer's other interactions to make solid inferences when requests are vague or confusing. This delights callers, who get correct results quickly, and frees up your staff to handle more challenging situations and edge cases.

Agents will improve with help from your team members, who will monitor interactions and customer satisfaction and iterate based on when the AI needs a human to take over. While you'll always need human service personnel, expect AI agents to handle an increasing percentage of customer and employee queries and requests.

4

AI agents will explain anomalies

Machine learning, or ML, excels at anomaly detection. It can spot, often with amazing accuracy, when a credit card transaction is fraudulent, for example, or when network traffic indicates a coordinated attack, a returns report for a retail partner may indicate a product defect, or a particular mix of prescription medications could lead to undesirable side effects.

ML can spot the problem. It can't, however, always explain why the warning light turned from green to red, other than to produce reams of log files, text tables, and other data. What you need isn't just data. It's explanations and context: What's the problem, exactly?

AI can take the data ML generates and explain what an anomaly means: It appears this credit card number was part of a breach and sold on the dark web. This pharma clinical study warns about a rare mix of meds. The common issue on these product returns seems to be batteries manufactured in this plant in late April.

AI agents can then go the next step and, if possible, offer a way to remediate. Let's notify the customer, cancel the credit card, and issue a new one. Let's flag the medication issue to the doctor, cite the research, and suggest one or two alternatives. Let's ask the product team to investigate those batteries while compiling a list of retailers that still have inventory; it's too soon for a recall, but let's get ready.

AI agents' anomaly explanation capabilities, augmented with clear-language GenAI reports and summaries, can help inform a range of decisions.

Built-in AI delivers

Each department in your organization depends on specialized software. Developers have integrated development environments (IDEs), languages, libraries, and templates. Accountants and controllers have financial systems, while other departments work with software tailored for human capital management, supply chains, enterprise resource planning, manufacturing, marketing, customer service, sales, and research and development.

72% of respondents believe generative AI's impact on their industry will be “high to transformative.”¹

If you're using commercial systems, either running on-premises or delivered from the cloud, expect 2025's major software updates to center on AI. The process of including AI-enabled capabilities will be slower with homegrown systems, but thanks to a wide range of tools and products, your own developers can add GenAI and ML features. Companies with specialized needs can augment with custom AI solutions.

Because these new capabilities will be built into your apps, teams can immediately enjoy the benefits of, say, automatically generated summaries, assistance with repetitive operations, and help with complex actions, such as predicting supply chain slowdowns or choosing the most cost-effective supplier. In some cases, GenAI tools will handle routine tasks so that your people can focus on the more complex work they enjoy—and that helps your organization stand out from competitors.

Here are some examples of how AI embedded in apps can pay off in 2025.

5 Developers deliver better code, faster

GenAI is proving itself just as good at writing C++, Python, and JavaScript as it is at writing English, Spanish, and Japanese. Think of GenAI as a member of your software development team—the vision now is for AI to go beyond writing functions to helping design and create full applications.

You can already use GenAI, embedded in development tools and platforms such as databases, to turn natural language prompts into SQL queries, low-code applications, and even simple mobile apps. In 2024, GenAI assisted with creating test cases, writing documentation, and performing code reviews. The next step is to use AI agents within development platforms for more complex tasks, such as designing an application architecture, mapping out the microservices needed for a cloud native app, and turning those results into ready-to-use application templates and frameworks.



6 Business units become more strategic

For rapid ROI when deploying AI, the sweet spot is to automate and enhance operations wherever you have lots of data to free up employees for the creative work at which humans excel. Let's look at finance as an example, specifically predictive planning. Machine learning studies your past performance and projects likely outcomes using predictive algorithms, statistical methods, and a wide variety of internal and external data sources. That's been done for years.

Now, with GenAI, natural language prompts enable your CFO—and the whole C-suite—as well as line-of-business managers to imagine “what if” questions.

An experienced financial analyst might need hours or days to run the numbers for a given scenario and write up an analysis. The AI agent can do that in seconds, including generating a report with graphs, charts, and tables, complete with analysis, recommendations, and even a proposed game plan.

And it's not just finance. AI can help most knowledge workers do far more, and more quickly. But to realize those benefits, most employees will need upskilling so they can fully leverage new tools and ways of working. Your organization may also need new roles, such as prompt engineers. Fortunately, your human resources teams and line-of-business managers can use AI to meet this demand. GenAI-based HR tools can ingest structured and unstructured data to help spot the perfect candidates for new projects and roles, even identifying candidates in areas of your company where employees may not have high visibility.



7 Security teams can be more effective

In 2025, the cybersecurity landscape will become more complex as bad actors take advantage of GenAI to improve their tools and attack methods. Defenders will need to keep up. Consider phishing emails: Your organization likely gets hit with thousands of these attempts daily, and employees have mostly learned to spot emails that slip through based on clues like misspelled words, poorly formed URLs, and a lack of detail. Now, GenAI will enable massive, more targeted phishing attacks using emails with flawless grammar and personalized touches along with URLs that may look valid to users and can bypass filtering mechanisms.

Part of the answer will be to fight AI with AI by improving both phishing filters and anomaly detection throughout the network. In addition, GenAI embedded in identity and access management (IAM) tools can help manage the end-to-end lifecycles of user identities and entitlements across all enterprise systems, in data centers, and in the cloud.

GenAI can assess the risk associated with each data access attempt based on factors such as user location, device type, and recent activity.

AI can also enable more precise authentication policies where higher-risk login attempts—determined by algorithms—can require additional verification steps. We know that ML algorithms excel at analyzing vast amounts of data to identify unusual patterns and events that may indicate malicious activity, such as suspicious login attempts, data breaches, or the phishing attacks we mentioned. With GenAI and agents, organizations can automate responses, such as quarantining suspected infected systems or blocking malicious users.

Data use improves

Data is often called the lifeblood of companies—not only the structured information that we know and use daily, but also unstructured and semistructured documents, such as spreadsheets, PDFs, memos, manuals, product reviews, customer-support chat records, and so on. What AI can do, broadly speaking, is help you get more value from that data. Searches will have greater scope, and results will come with greater context and generate deeper insights.

Businesses typically analyze numeric data within specific silos, such as financials, inventory management, or marketing program responses. You can use pattern recognition, predictive modeling, and anomaly detection to find problems, gain insights, and plan future actions. By expanding the scope across silos and across the wide range of information at your disposal, you can make better predictions, spot more subtle patterns, and find answers to the thorniest questions.

GenAI gets smarter over time by keeping track of past interactions and gauging their success.

Give it more data, and it can find more patterns. As algorithms improve, applications—homegrown and commercial—will become more insightful. And as computing platforms become more powerful, the depth of analysis will grow because the LLMs will become richer. **Here are ways this will work.**

8

Smart software becomes more useful because it understands context

As discussed, agents and other AI technologies built into the software you already use—for CRM, ERP, HCM, supply chain management, and so forth—bring together business data, ready-to-use analytics, and specialized AI models to deliver deeper insights and help accelerate decision-making. As time goes on, expect AI to become much more useful because, when it's integrated into all those apps, you don't have to go through the work of providing context, either within the prompt or by using an add-on technology like RAG. The AI can look for itself.

Context, however, depends on broad access to information.

Many organizations have started down the data unification path with data lakes, which provide a central repository for storing large amounts of unstructured data in their original formats. The newest enterprise databases and enterprise applications go further, combining data with built-in vector databases and LLMs.

The payoff: Whether you're talking finance, HCM, ERP, manufacturing, sales, finance, or R&D, your everyday applications can learn from vast amounts of data. Reports can show results that consider a wider array of internal and external data sources. And the insights will be that much more, well, contextually insightful.

Vectors: AI's superpower

How does generative AI find information that's related to other information? By searching and comparing vectors. When a GenAI system is training, words and images are converted into numeric formats that map to an abstract representation of the data. Those numbers contain an encoding of the original data—the words or images—and, vitally, indicate that data's position in a multidimensional space. That position indicates its context, from which the GenAI can infer meaning.

All those vectors must be stored somewhere. At first, AI researchers used special-purpose vector databases, but many now use MySQL or Oracle Database 23ai, which incorporate vectors as a native data type. Using a single database that stores embedded vector data alongside the original data reduces complexity and redundancy during training. It also expedites operations when the GenAI system is in production because it speeds up vector searches and retrieves just the right information.

How Do Vector Databases Work?

Vectors are arrays of numbers that represent the attributes of items—words, documents, images, movies. A vector database puts these vectors in a special index that groups similar items, enabling fast similarity searches. Let's see how it works to recommend a movie.

Viewer vectors

The database stores vectors that describe customers based on their demographics and prior preferences.



Movie vectors

The database stores vectors that describe each movie, such as language, genre, and actors, and indexes similar movies "close" together.



Database

Our viewer's vectors are "close" to sci-fi movie vectors in the database index.

Video recommendations

The database returns the closest matches, and the recommendation system displays them for the viewer.





9 Agents grow more relevant as they leverage GenAI, ML, and data analytics

GenAI will increasingly do the heavy lifting of interpreting the results of ML and analytics systems by adding context and presenting reports in real time. You'll still need to train ML systems on your specific data sets—anomaly detection tools, for example, need to know what a “good” transaction looks like, and that requires access to a large data pool. However, the payoff is in applying what ML has learned in a current context.

For one thing, you can pare back the time spent generating and customizing reports. Let AI do that, using natural language as well as its understanding of your audience's needs. And because this can all happen in real time, you don't need to wait for end-of-month or end-of-quarter runs to see trends; ML-based triggers can raise a flag whenever something unusual happens.

Add AI agents, and machine learning can spur appropriate actions. ML suspects fraud? Let the AI recommend and then perform the proper procedures. ML sees that inventory is low or imbalanced? Let AI generate orders and shipping manifests while automatically finding the lowest-cost means of moving pallets from point A to point B. ML spots a pattern in late-paying customers? Let AI suggest the most appropriate actions, whether adjusting credit terms, alerting the sales team, or recommending policy adjustments.

10

AI works to unify your structured and unstructured data

Every organization has mountains of data: invoices, spreadsheets, databases, PDFs, scans, transcripts, and more. Employees often struggle to find the answers they need because all this information isn't easily accessible. That's where AI steps in to extract precise answers from messy, varied data sets and point directly to the source, without needing you to first standardize or integrate data, all while maintaining security.

Even better, AI learns as it works. It can analyze historical patterns, link yesterday's sales to today's activity, and make information current and actionable. For IT teams, once they enable GenAI to access data securely and put compliance and security controls in place, it's time to encourage broader data access across the organization to unlock the full potential of AI-powered insights.



Oracle is here to help

Oracle is ready to deliver for your enterprise in three major areas: managed AI services from Oracle Cloud Infrastructure (OCI), an ever-increasing array of AI capabilities and tools in Oracle Database 23ai and Oracle HeatWave GenAI, and AI and agents built into Oracle Fusion Applications.



Oracle Cloud Infrastructure: When off-the-shelf isn't enough, you can build new applications or expand existing ones using the extensive AI libraries, services, and capabilities in OCI. The services are accessible to any developer, with or without AI coding experience, and cover areas including machine learning, speech recognition, language understanding and translation, vision and imaging, digital assistants, data categorization and labeling, and automated document understanding.



Oracle Database 23ai: Database developers and administrators, especially those using the latest technologies in Oracle Database 23ai, can leverage vector data and vector search from within the database—there's no need for a separate external vector store. They can also leverage natural language querying, JSON relational unification, and even AI-enhanced data encryption to let ML systems analyze data without extracting the data itself. Oracle Database 23ai is available on-premises and in OCI, Amazon Web Services (AWS), Google Cloud, and Microsoft Azure.



Oracle HeatWave GenAI: With integrated, automated, and secure generative AI with in-database LLMs; an automated, in-database vector store; scale-out vector processing; and the ability to have contextual conversations in natural language, teams can take advantage of generative AI without AI expertise, data movement, or additional cost. HeatWave GenAI is available in OCI, AWS, and Microsoft Azure.



Oracle AI Agents: In September 2024, Oracle released more than 50 AI agents in its Fusion applications, all designed to tackle business processes and make you more efficient. You're likely comfortable using keyword triggers and precoded business rules and workflows; AI agents go a step further. They use LLMs to carry complex, multistep processes across data sources and applications and can carry out the most appropriate action even when facing novel scenarios. These are new features available to every Fusion customer, at no additional cost.

How to get started

If you're already an Oracle customer, a range of our AI capabilities are available to you today. They'll only improve as we continue building out our solutions portfolio to better serve cutting-edge use cases and harness the latest emerging technologies.

Organizations large and small made tremendous inroads using GenAI and AI agents in 2024, and although it may be hard to believe, we're still at the very beginning of this journey. Imagine what you'd like AI to do. Chances are, you can make it a reality now. As you set your AI strategy, we invite you to discover use cases across retail, healthcare, and other industries—and to dream big.

Explore Oracle AI solutions

Discover AI use cases

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