

Delivering Value With AI Applications and Agents

Accelerate enterprise AI value
realization at scale.



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Software engineering organizations are under extreme pressure to deliver key business value through AI applications and agents, and the ones that will be most successful are those who invest in AI skills and technologies.

65% of software engineering organizations reported that a lack of AI engineering skills is a major barrier to meeting their business objectives.

AI agents are reshaping software delivery, but most organizations remain stuck in fragmented systems and limited scale. Leaders must rethink how applications, data and integrations work together.

To establish a foundation for an agent-driven enterprise, software engineering leaders must:

- **Adopt** the Model Context Protocol (MCP) to standardize AI integration and halt long-term technical debt
- **Enforce** evaluation-driven development and AgentOps to guarantee AI application reliability
- **Eradicate** AI engineering skills gaps to rapidly deliver differentiating business value



Andrew Humphreys
Vice President Analyst

Your roadmap to success

Unlock autonomy and automation by aggressively leveraging APIs, internal data and modern integration protocols to transform your applications and systems from isolated tools into an orchestrated enterprise.

Gartner equips software engineering leaders with complete AI integration frameworks. With Gartner, leaders convert the intense pressure to deliver AI value into reliable, orchestrated enterprise systems, backed by expert architectural guidance and high-impact use case validation.

1. Build AI engineering and integration skills using AI agent frameworks and integration technologies.

2. Prioritize high-impact use cases against quality APIs, performant models and trusted data sources.
3. Select and invest in AI application development platforms.
4. Build AI applications with test-first and AgentOps practices for reliability and maintainability.
5. Maximize AI value through scaling use of MCP servers/clients and integrating agents.

2 key outcomes to consider in Step 1

Build a workforce capable of delivering scalable, high-quality AI applications. Enable engineers with the skills needed to reduce risk, accelerate delivery and sustain AI innovation at scale.

Accelerate the transition from AI experimentation to production-ready systems. Establish repeatable pathways to rapidly validate, integrate and scale AI agents across enterprise environments.

Key questions your software engineering leader peers are asking Gartner

Gartner clients can click to explore answers.

How do we architect and deliver AI applications and agents?

[Explore Answer ↗](#)

How do we integrate AI agents and applications, and orchestrate multiagent systems?

[Explore Answer ↗](#)

How do we acquire AI engineering and other skills needed to deliver an effective AI strategy in software engineering?

[Explore Answer ↗](#)

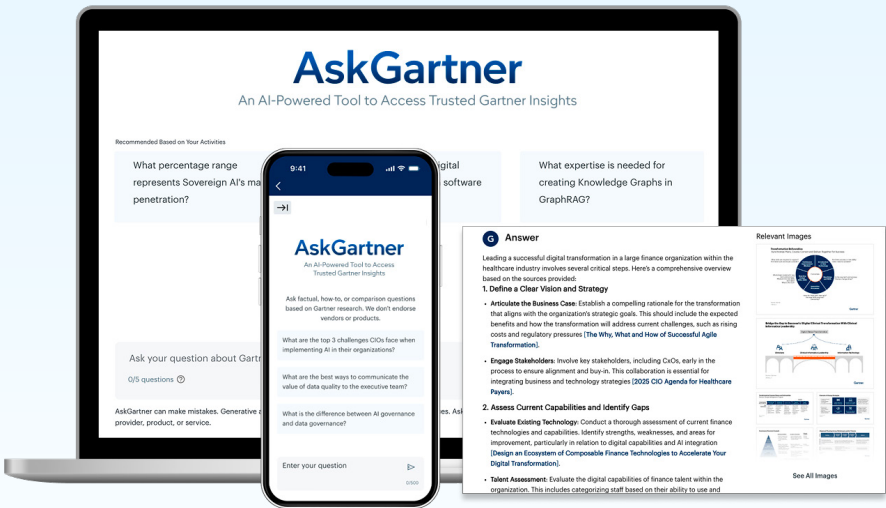
How do we test and ensure quality for AI systems?

[Explore Answer ↗](#)

How do we secure development of AI agents and utilization of the Model Context Protocol?

[Explore Answer ↗](#)

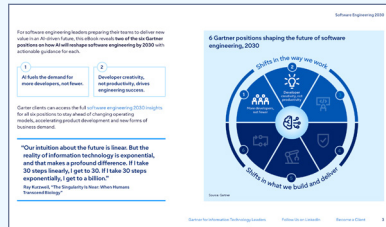
Your peers use AskGartner to answer these questions in minutes.



[Learn More](#)

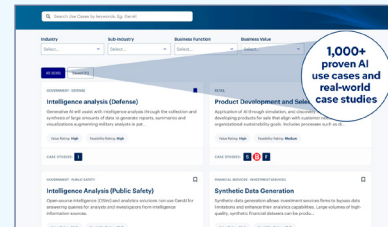
Gartner resources turn your priorities into plans and actions

Build AI engineering and integration skills using AI agent frameworks and integration technologies.



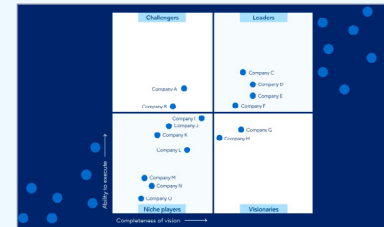
Insights: Future of Software Engineering 2030: The Impact of AI

Prioritize high-impact use cases against quality APIs, performant models and trusted data sources.



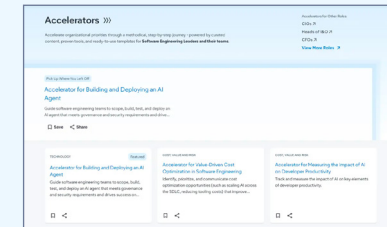
Tool: AI Use Case Insights

Select and invest in AI application development platforms.



Webinar: Magic Quadrant for Enterprise AI Coding Agents

Build AI applications with test-first and AgentOps practices for reliability and maintainability.



Tool: Accelerators

Maximize AI value through scaling use of MCP servers/clients and integrating agents.



Webinar: Architecting Externalized Authorization for Modern Applications

Engage with Gartner

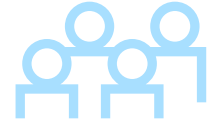
- Connect with an analyst to define, plan and monitor your AI-native engineering strategy.
- Get guidance from an Executive Partner on change management best practices throughout your journey, including how to best overcome roadblocks along the way.

Expected outcomes

- Updated developer skill sets and responsibilities necessary for AI-native engineering
- Strategies to adapt software delivery workflows to maximize developer productivity
- Leadership approaches to develop and evolve the long-term software engineering strategy

Who needs to be involved?

The most successful organizations establish cross-functional teams for scaling AI apps and agent initiatives. We have outlined the recommended functions to involve and their roles to ensure the best success in hitting the milestones.



Software engineering leader and team ↗

Drive AI integration by clarifying desired outcomes, establishing engineering best practices, transforming services with an AI-first approach and architecting software development to support AI objectives.

CIO/head of technology ↗

Sets a clear enterprisewide AI ambition, identifies use cases, quantifies benefits and risks, aligns teams and competencies, and drives innovation across the organization.

Head of AI ↗

Develops, champions and executes the organization's AI strategy by overseeing AI use case selection and scaling, establishing governance and literacy, implementing solutions, monitoring market trends, building a world-class team and reporting on business impact.

Chief data and analytics officer and team ↗

Lead the organization's AI data strategy by identifying use cases, establishing governance, developing new data value and ensuring data readiness for AI technologies.

Chief information security officer and team ↗

Integrate cybersecurity and data privacy into AI strategy by managing trust, risk, sovereignty and security; overseeing programs; anticipating threats; updating skills; and designing resilient solutions.

Head of enterprise architecture and team ↗

Align AI structure and design with organizational value by guiding use cases and requirements, governing architecture investments, leading adoption decisions and architecting AI solutions.

Use Case

Build and Integrate AI Applications and Agents

Mission-critical priority

Software engineering organizations are under extreme pressure to deliver key business value through AI applications and agents, and the ones that will be most successful are those who invest in AI skills and technologies.

**How Gartner resources help**

Software engineering leaders work with Gartner to build and scale AI applications and agents across a range of use cases. Gartner provides critical guidance on selecting the right architecture for AI agents, evaluating leading AI application development platforms through Magic Quadrants, and leveraging modern AI agent development frameworks.

Leaders also engage directly with Gartner analysts to identify emerging design patterns, gain best practices for scaling AI development and select best-in-class tools. This support helps organizations ensure quality in novel AI solutions while effectively integrating AI into both custom-built and enterprise systems.

**Mission accomplished**

With the support of Gartner, organizations leverage maturity assessments and structured journey guides to advance their AI application and agent development. They gain guidance to optimize costs and minimize AI waste, while ensuring solutions operate safely, efficiently, and consistently deliver measurable business value.



Address your other mission-critical priorities



Build and integrate AI applications and agents.

65% of software engineering organizations reported that lack of AI engineering skills is a major barrier for organizations to meet their business objectives.



Use AI to accelerate productivity throughout the software development life cycle.

80% software engineering teams will struggle to see productivity gains from using AI unless they apply it across the full SDLC.



Future of software engineering: Reenvision organization, teams talent and workflows.

68% of software engineering organizations say AI-driven automation will cause all engineering roles to evolve.



Establish foundations for AI-ready software engineering technology.

60% of software engineering leaders expect to increase investments in AI-augmented tools, AI capabilities and AI skills.



Innovate and modernize to improve software engineering value delivery and costs.

Only 50% of software engineering leaders rate their teams highly effective in meeting target business objectives.

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