Gartner

Software Engineering 2030

The Impact of AI

Future-fit strategies to deliver new value.

What will software engineering look like in 2030?

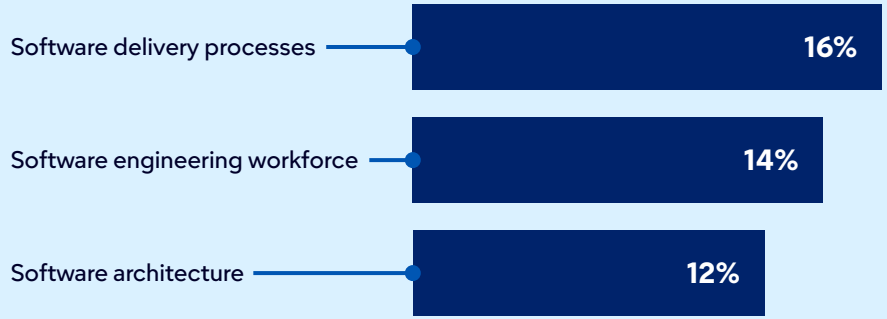
AI is reshaping software engineering, with far-reaching impacts on how teams are structured, how work gets done, and what is built and delivered. AI-enabled tools and technologies are becoming integral to development, and advanced AI capabilities are now expected in new software.

However, most software engineering leaders feel unprepared — **16% or fewer believe their current processes, workforce and architecture are ready for AI.**

Today's startups — born in the AI-native era without legacy constraints — are leading the way. Studying their innovative software engineering models helps predict and extend the practices that enable rapid, unique value creation.

AI readiness in software engineering

Percentage of software engineering leaders who believe each component of their operating model is ready for AI



N = 195 staff and leaders in software engineering
Source: Gartner AI-Driven Disruptions in Software Engineering Survey, June 2025

For software engineering leaders preparing their teams to deliver new value in an AI-driven future, this eBook reveals **two of the six Gartner positions on how AI will reshape software engineering by 2030** with actionable guidance for each.

1

AI fuels the demand for more developers, not fewer.

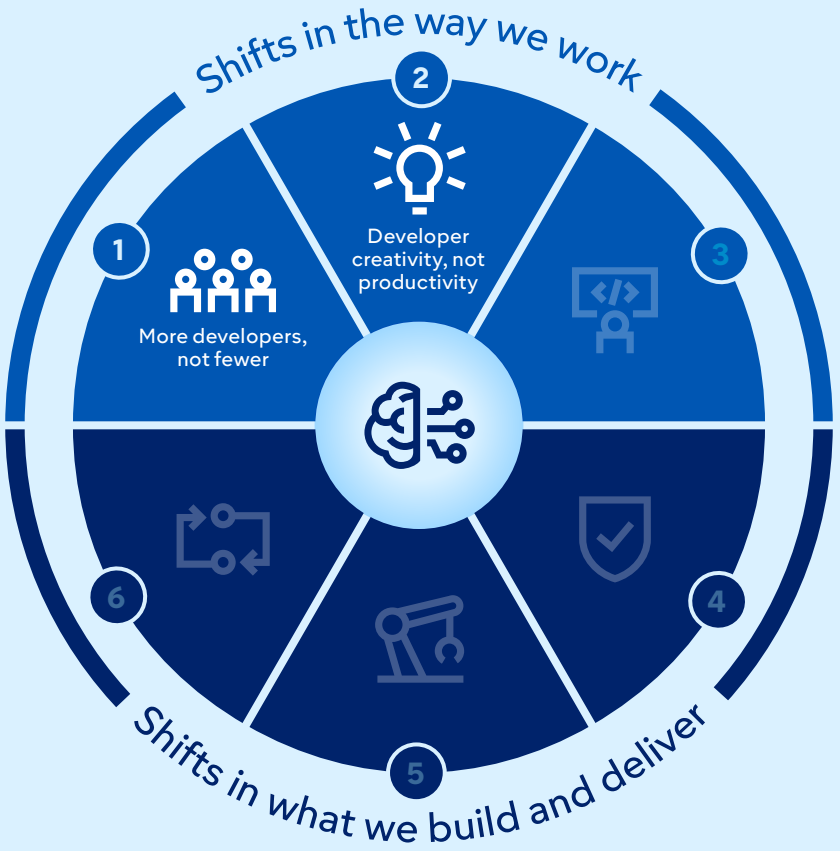
2

Developer creativity, not productivity, drives engineering success.

Garter clients can access the full software engineering 2030 insights for all six positions to stay ahead of changing operating models, accelerating product development and new forms of business demand.

> **"Our intuition about the future is linear. But the reality of information technology is exponential, and that makes a profound difference. If I take 30 steps linearly, I get to 30. If I take 30 steps exponentially, I get to a billion."**
>
> **Ray Kurzweil, "The Singularity Is Near: When Humans Transcend Biology"**

6 Gartner positions shaping the future of software engineering, 2030



Source: Gartner

1

Gartner Position 1

AI fuels the demand for more developers, not fewer

What to expect

As AI reduces the cost and increases the efficiency of software development, demand for software and developers will grow. The need for intelligent applications will further boost demand for developers, whose roles will shift toward AI product engineering focused on customer-driven innovation and competitive, AI-first business models.

Why trending

World Economic Forum 2025 data projects that software developer roles will grow by 57% from 2025 to 2030, driven by AI. This reflects the Jevons Paradox: AI efficiency increases, rather than decreases, the need for developers as demand for software rises. New AI capabilities also boost business and customer demand for AI-powered solutions, requiring more developers skilled in AI engineering.

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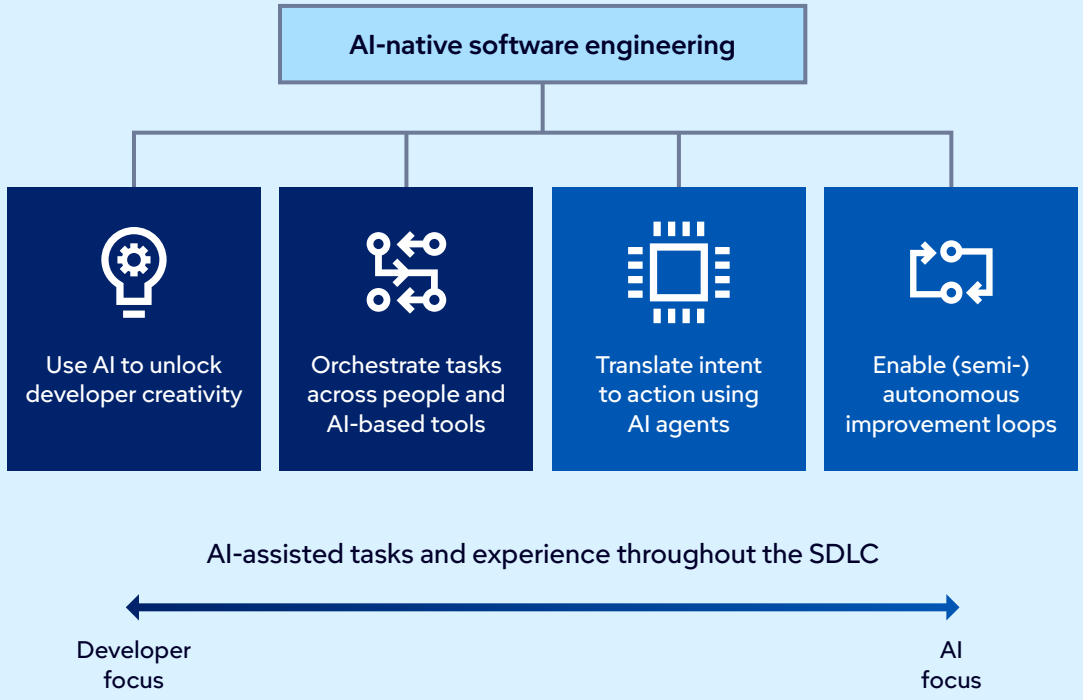
AI-native software engineering



Source: Gartner

The take-away

The demand for developers with advanced skills in AI engineering, customer-centricity, product orientation and cross-disciplinary collaboration will increase. **Software engineering leaders who reduce their workforce out of a misplaced plan for efficiency due to AI will outperform those who instead invest in upskilling their workforce to capitalize on new product opportunities.**

Featured insights

- **Create upskilling programs** to prepare developers for new roles and responsibilities in AI orchestration and oversight, as well as development of AI-powered applications. For more details, Gartner clients can access How to Upskill Software Engineering Teams in the Age of AI.
- **Debunk the myth that AI will eliminate developer jobs** through continued investment in talent acquisition and development. For more details, Gartner clients can access AI Will Not Replace Software Engineers (and May, in Fact, Require More).

2 Gartner Position 2

Developer creativity, not productivity, drives engineering success

What to expect

As AI makes productivity a commodity, measuring software engineering effectiveness will shift from traditional metrics (such as velocity and deployment frequency) to creativity and innovation. Value will increasingly come from software engineers' ability to ideate, experiment and innovate.

Why trending

AI is already boosting productivity — 45% of software engineers report over 10% gains.* By 2030, productivity will be a baseline, not a differentiator. Competitive advantage will depend on creative problem-solving and designing unique, innovative solutions in previously unimagined ways.

* Gartner Developer Experience Assessment Survey

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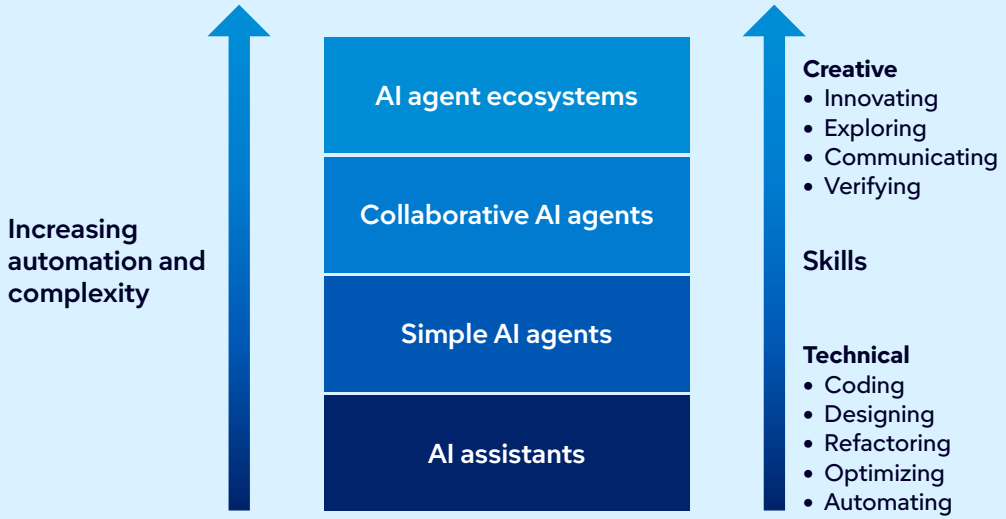
Skill changes due to AI evolution in software engineering



Source: Gartner

The take-away

Organizations focused solely on productivity will lose their edge to those prioritizing creativity and innovation. As productivity becomes a baseline, traditional output metrics will be replaced by creativity-focused assessments. Developers who can think creatively and solve business problems with novel solutions will be highly sought after. **Software engineering leaders should prioritize creativity in hiring, including neurodiverse individuals.**

Featured insights

- **Proactively hire neurodiverse candidates** who "think differently," flipping problems on their head, to inject creativity into software development. For more details, Gartner clients can access 10 Actions to Maximize the Potential of Neurodiverse Talent.
- **Pilot new performance metrics, rewards and recognition** that capture and incentivize innovation and creative contributions. For more information on metrics to assess innovation, Gartner clients can access Creativity, Not Productivity, Drives Software Engineering Excellence.
- **Embed assessment and development of creative skills** in hiring and training processes. Foster a culture of experimentation, psychological safety and learning from failure.

Connect with us to learn more about all six Gartner positions from the Future of Software Engineering in 2030 insights.

Connect With Us

Explore more Gartner resources on the future of software engineering 2030, including:

- Roadmap to the Future of Software Engineering
- Readiness Assessment for the Future of Software Engineering 2030
- Software Engineering in 2030: How We Will Work
- Creativity, Not Productivity, Drives Software Engineering Excellence
- AI Transforms Today's Software Engineering Teams to Tiny, Talent-Dense Product Teams

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Actionable, objective insights

Position your organization for success. Explore these additional complimentary resources and tools for IT and software engineering leaders.

Guide

Map Your AI Use Cases by Opportunity

Ready your enterprise to capture AI opportunities.

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Research

How to Use Generative AI to Boost Developer Productivity

Use GenAI tools to improve developer satisfaction, collaboration and flow.

Read Now

Roadmap

The Guide to Building an AI Roadmap That Drives Value

Turn the idea of AI into a concrete sequence of steps to deliver value.

Access Now

Webinar

How Software Engineering and D&A Leaders Should Partner to Drive AI Advancements

Adopt innovative solutions and enhance operational efficiency.

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