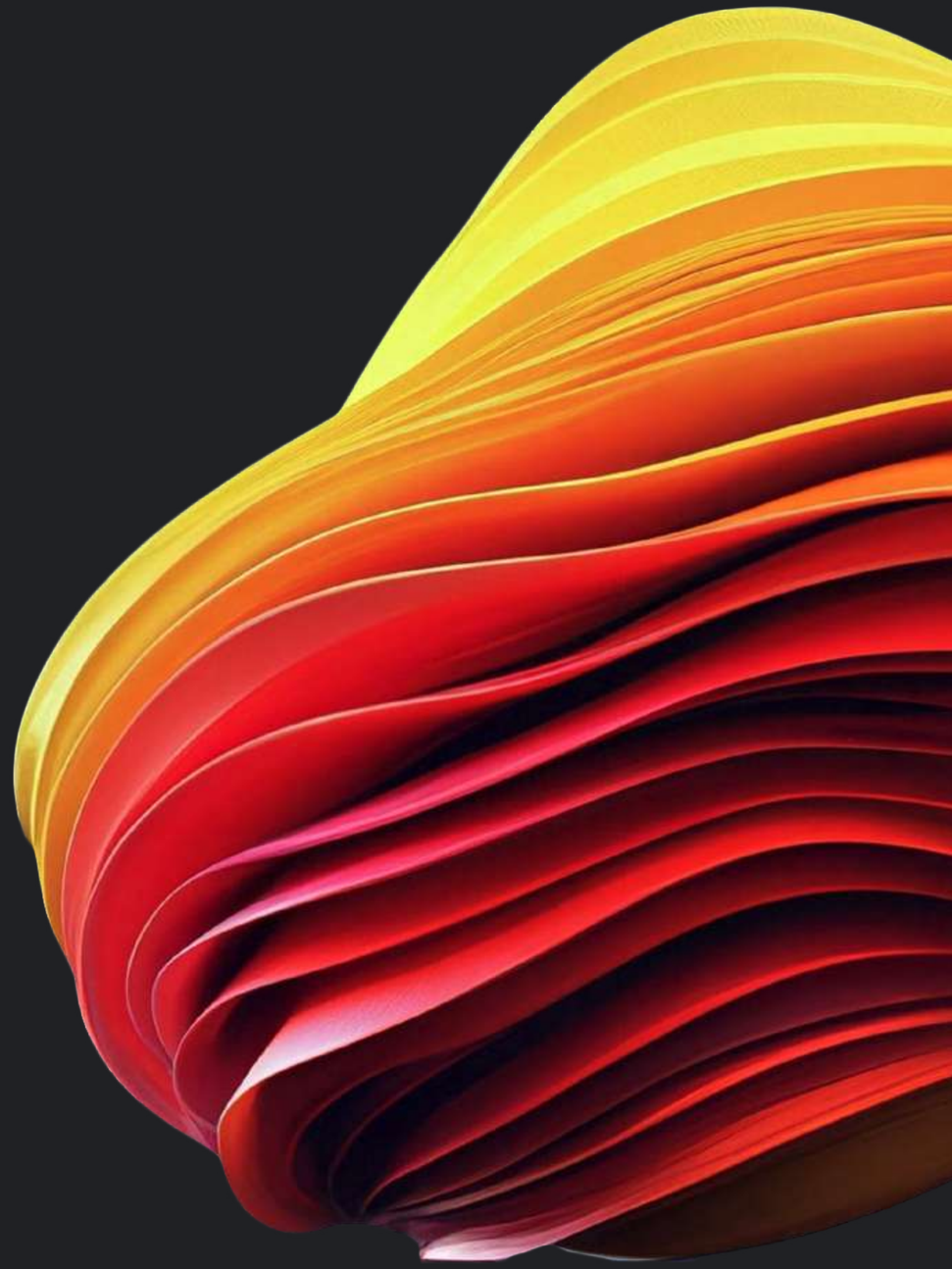
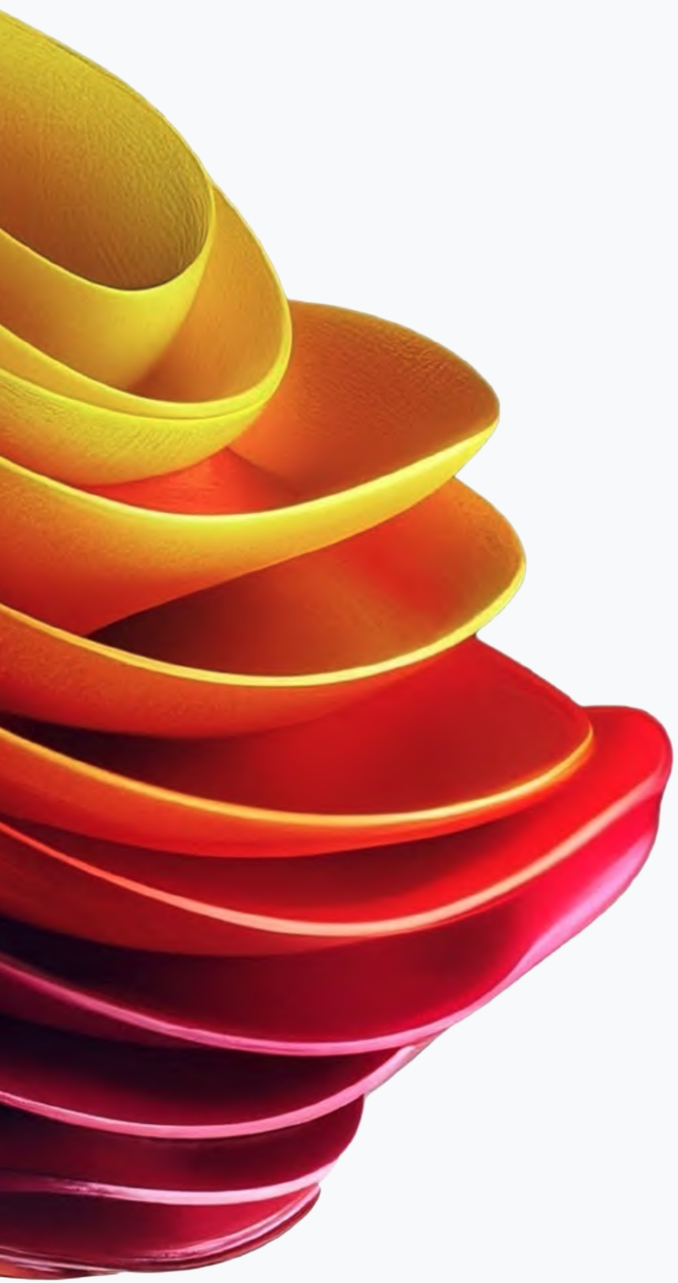
Google Cloud

AI meets the games industry.

How developers are using generative AI to create a new generation of games





Introduction

The games industry is currently in the midst of profound changes, with development costs rising, markets increasingly saturated, and players gravitating toward older games—all of which underscore the need for studios to continuously innovate.

In this landscape, generative AI (gen AI) has emerged as a powerful ally. Currently, 97% of game developers say that gen AI is reshaping the industry, leading to intense experimentation, AI-integrated workflows, and enhanced player experiences.

But how are these innovations playing out for developers? What impact is AI having on the industry? Is it opening up new opportunities for careers—or even companies? What types of gameplay are being created? How is it impacting game development pipelines? Where are the most promising avenues for growth? And what concerns is it raising?

To find the answers to these questions and more, Google Cloud and The Harris Poll conducted a research study in late June and early July 2025 with 615 game developers in the United States, South Korea, Norway, Finland, and Sweden. In the following pages, you can find the highlights of this survey and their implications for both the current state of AI in the industry, and where it may be heading next.

Executive summary

The study confirmed the massive impact of gen AI on game development, with respondents largely agreeing that it is having a positive influence across a wide range of creative efforts, business settings, and internal workflows. However, it's clear that game developers face some hesitancy around the adoption of gen AI, particularly due to data and ownership rights. Key findings include:

Universal adoption: AI is already ubiquitous in game development, playing a major role in streamlining repetitive tasks and enhancing creative workflows. This is helping to level the playing field, allowing innovative new startups to compete with larger, more established studios.

Promising new trends: AI agents are also on the rise. Developers are building and deploying them for intelligent nonplayer character (NPC) behavior, dynamic gameplay balancing, and much more.

New roles and responsibilities: New AI-based roles are emerging, while existing jobs are increasingly integrating AI into their workflows, with 90% of games developers already using it in their work.

Rising player expectations: 89% of developers report that AI integration is changing player expectations, with 37% seeing gamers looking for more lifelike experiences.

Ownership considerations: While AI shows promise in addressing longstanding issues in the industry and in game development, 63% of developers also express concerns about data ownership, while 35% worry about player data privacy.

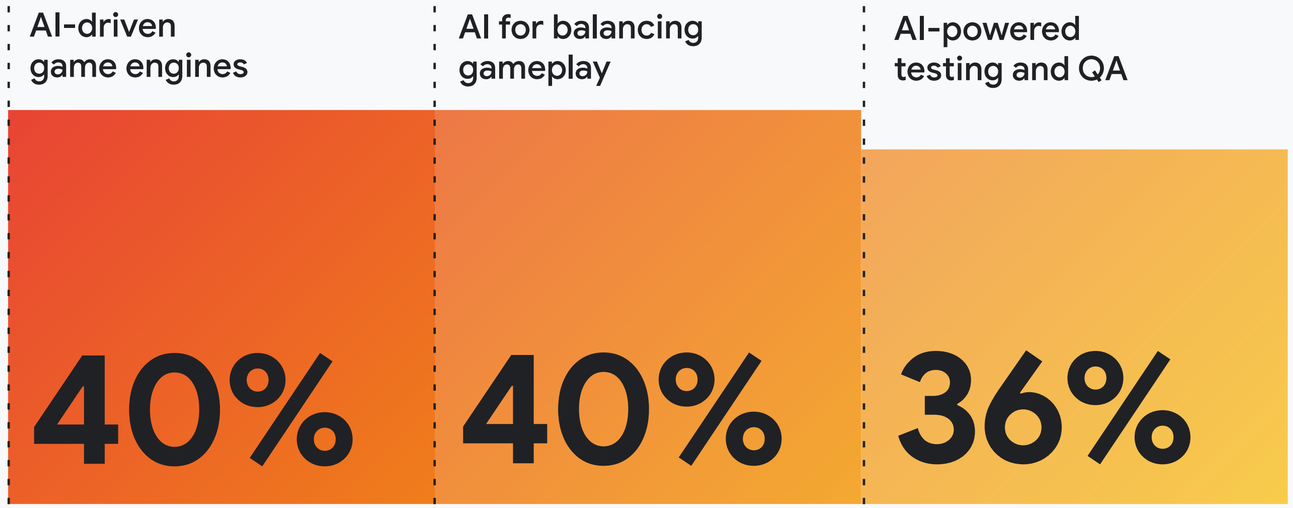
AI's winning role

The survey finds AI is receiving a positive reception in the games industry—and opening up new possibilities.

The games industry has long been ultra-competitive, but in recent years, it has navigated a rising tide of layoffs, studio closures, longer development cycles for new games, and skyrocketing costs for major titles. For smaller studios, standing out against a sea of new releases has grown increasingly difficult.

In this environment, developers overwhelmingly see gen AI as a positive development, and one that is leading to better outcomes. When it comes to general impact, more than 90% of developers say it is helping with an array of challenges, including driving innovation and enhancing the player experience.

Most promising trends perceived by games professionals:



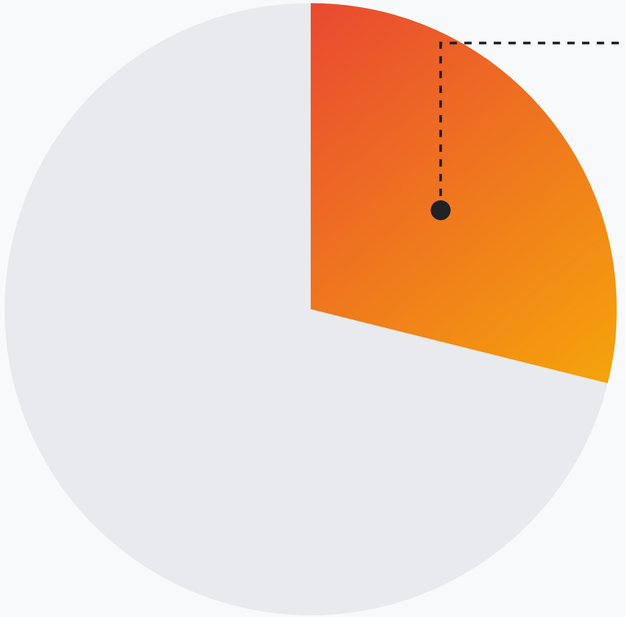
AI especially shines in its ability to automate cumbersome and repetitive tasks, freeing developers to focus on more strategic and creative concerns—not to mention reducing iteration cycles and decreasing time-to-market. In particular, 47% of developers report that it is speeding up playtesting and balancing of mechanics, 45% say it is assisting in localization and translation of game content, and 44% cite it for improving code generation and scripting support. Developers in the United States report this more so than those in South Korea, especially when it comes to AI-driven playtesting, automated content tagging, and enhanced code generation.

97%
see gen AI reshaping the industry

95%
say it is reducing repetitive tasks in workflows

94%
say it is driving innovation

And, some see AI as a transformative force in the broader industry: driving democratization across studios and enabling independent studios to level the playing field with more established players.



29%

say it is democratizing the games industry

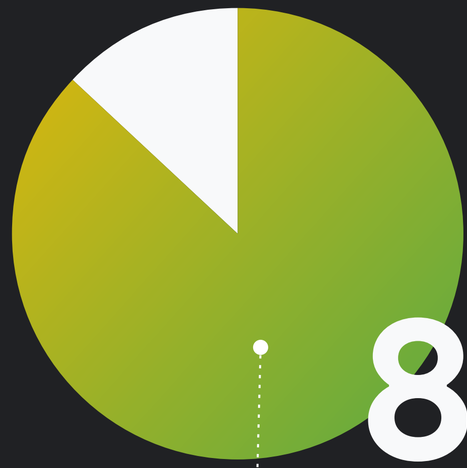
The rise of AI agents

AI agents are software systems that use AI to pursue goals and complete tasks on behalf of users. They can demonstrate reasoning, planning, and memory, and have a level of autonomy to learn, adapt, and make decisions.

These capabilities are made possible in large part by the multimodal capacity of gen AI and AI foundation models. As a result, agents can process information, such as text, voice, code, audio, and video, enabling them to converse, reason, make decisions, and even learn and improve in these capacities over time. Agents can also work with other agents to coordinate and perform more complex workflows, as well as facilitate transactions and business processes.

This signals a shift toward systems that respond in real time, reducing the need for manual adjustments, and enabling more flexible and dynamic game environments. For example, games today can feature NPC agents that can intelligently collaborate with each other to attack a player using complex strategies like flanking, weapon-sharing, and even setting traps and modifying terrain features to gain an advantage. AI agents can also vary the difficulty of the scenario to match each playing style or ability of the player.

The research revealed that a significant subset of developers is already deploying AI agents in their games. For example, 44% are using AI agents for content optimization, 38% for dynamic balancing and tuning of gameplay, and 38% for in-game coaching and automated tutorials. Developers in the United States are deploying agents at a faster rate than other markets, with a particular focus on NPC behavior, automated testing, and in-game coaching and advanced tutorials.



87%

are using AI agents in their work

AI agents and the future of game development

The growing adoption of AI agents has important implications for game studios and developers, as the technology is poised to redefine several areas:

01

Accelerated development cycles
AI agents can automate repetitive or complex tasks, such as content generation, testing, and balancing. This can significantly reduce development time and costs, allowing studios to iterate faster, experiment more freely, and bring new game concepts to market more efficiently.

02

Enhanced player experiences
For players, this translates directly to more realistic and responsive gameplay. Currently, games are adapting seamlessly to individual skill levels, deploying NPCs with truly intelligent behaviors, and personalizing tutorials. This level of dynamic interaction elevates immersion and replayability, setting a new standard for the next generation of games.

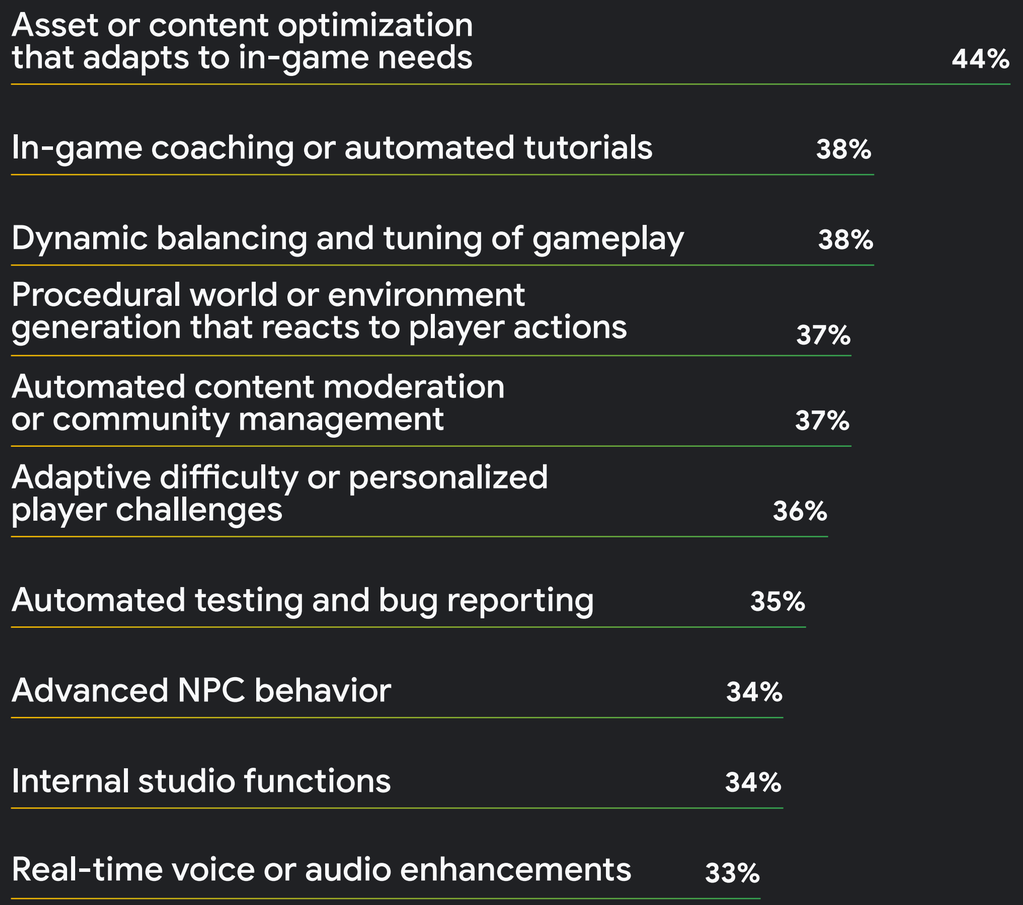
03

New creative horizons
Beyond efficiency, AI agents open up entirely new creative possibilities. Developers can design emergent gameplay scenarios, unpredictable narratives, and environments that evolve in response to player actions, pushing the boundaries of what's possible in interactive entertainment.

04

Strategic resource allocation
Studios will likely need to re-evaluate how they allocate resources. They will increasingly need talent capable of designing, implementing, and overseeing AI-driven systems. This requires a greater emphasis on roles like AI architects, prompt engineers, and data scientists—and a shift away from manual asset creation or scripting in certain areas.

How developers are using AI agents



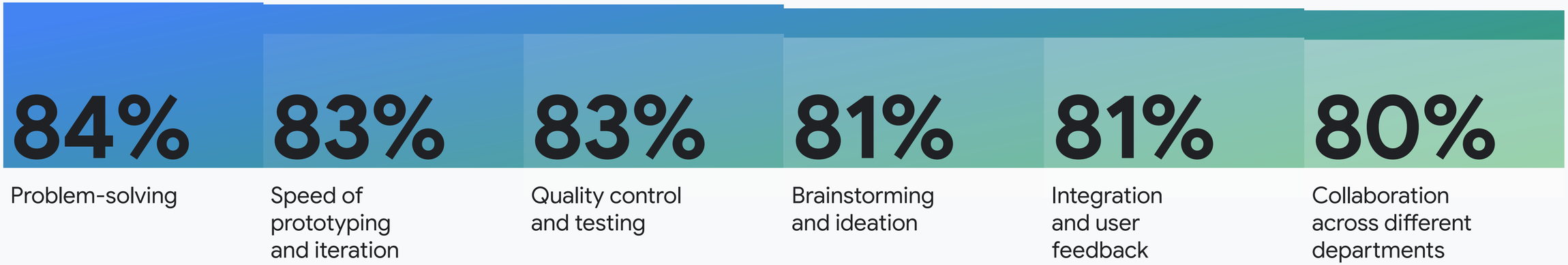
Transforming workflows

AI is upending norms in developers' daily lives and work processes.

When it comes to their daily work, developers report that gen AI is having a significant and generally positive impact on workflows. In particular, 40% see AI-driven game engines and tools for balancing gameplay as the most promising development, signaling a significant shift toward AI's integration in the fundamental aspects of game creation.

56% say existing roles have evolved to include AI-related tasks

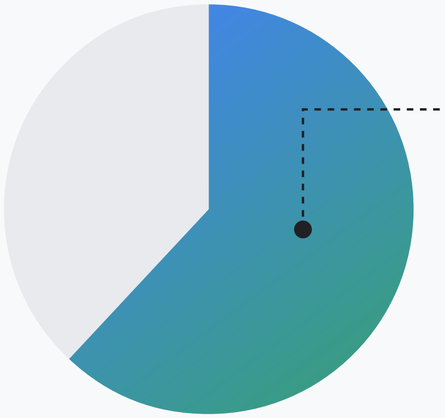
As a result, teams are adding new roles, such as AI engineers and AI content designers. Existing roles are also changing, with 56% of respondents noting that some have evolved to include AI-related tasks. As a result, large majorities see AI changing how their team collaborates on key tasks, such as:



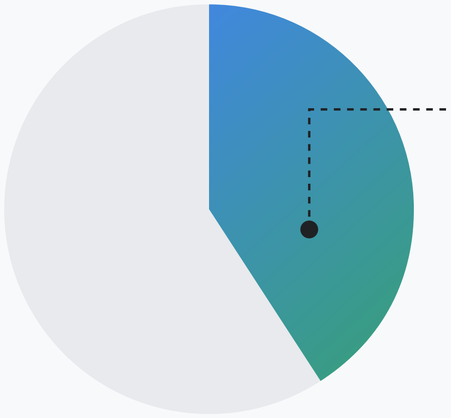
This shift is helping address a number of major industry challenges, including improving analytics for player retention and engagement (41%), speeding up projects and delivery (40%), and updating or maintaining older games (38%), while freeing up time to focus on innovation (38%).

How developers see AI changing the games industry

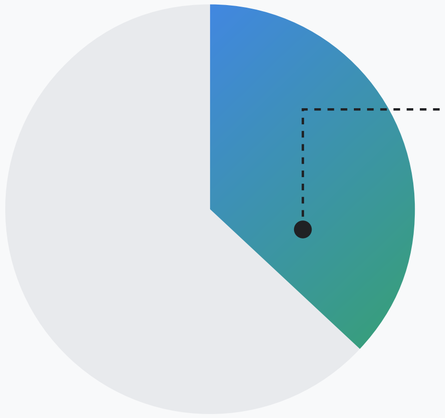
Better graphics and immersive environments	30%
Democratization of game development (e.g., tools accessible to smaller studios)	29%
Faster iteration and development cycles	28%
More reliance on data-driven decision-making	28%
Increased competition and innovation from new entrants	28%
Greater player expectations for personalization	27%
Emergence of new genres or gameplay types	27%



62%
say new AI-focused roles have emerged



41%
say AI is helping improve analytics for player retention and engagement



37%
report enhanced experimentation

Redefining creativity

AI is also becoming an ally in creative workflows.

36% of respondents are using AI for dynamic level design, animation and rigging, and dialogue writing. But it's not just practical tasks where AI is beginning to shine: 37% of developers report that they have enhanced experimentation with new gameplay or narrative concepts, while 36% note increased flexibility in creative exploration. And 36% report AI has encouraged more iterative approaches to creative work.

This signals a shift in how developers are using AI, not just for coding and internal workflows, but now into the fundamental aspects of game creation.

say AI increases flexibility in creative exploration

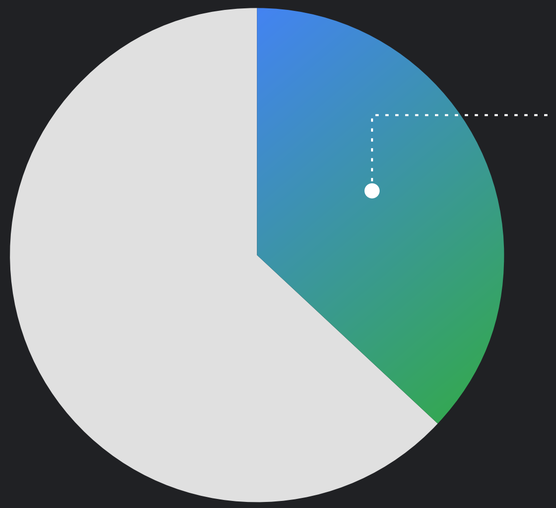
are using AI for dialog writing support

are using AI for narrative design

Enhancing player experiences

Player expectations are changing thanks to innovative uses of AI.

As consumers are enjoying new, AI-driven features like adaptive difficulty, more realistic animations, and dynamic worlds, their expectations for games have risen. Players now expect games to not only respond to their skill level, but also their playing style and individual preferences. This is already evident in the market, with 37% of developers noting that players are seeking out games that feel more “alive” and dynamic. Additionally, 35% say players now expect to get into the game faster, thanks to more intuitive, AI-driven tutorials.



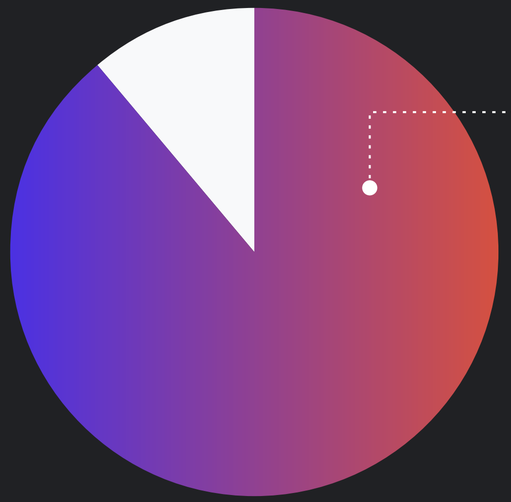
37%

expect games that feel more “alive” and dynamic

35% **expect to get into games faster with AI-driven tutorials**

In fact, the survey found that 89% of respondents are observing changes in consumer expectations due to AI integration, especially around smarter and more responsive games. They reported the following top opportunities for the future: dynamic world changes in response to gameplay (23%), NPCs that learn and adapt (23%), personalized marketing or in-game recommendations (22%), and automated moderation of player-generated content (22%).

These heightened expectations are a direct result of how creatively developers are already leveraging AI. For instance, 33% say AI is helping them create AI-enhanced live events or seasonal content updates, 29% are using AI-driven accessibility features for diverse player needs. An equal number are using AI to create personalized content for individual players.



89%

see the use of AI changing what players expect

Where AI enhances player experiences

AI for realistic character animations and gestures	23%
Dynamic world changes in response to gameplay	23%
NPCs that learn and adapt	23%
Personalized marketing or in-game recommendations	22%
Automated moderation of player-generated content	22%

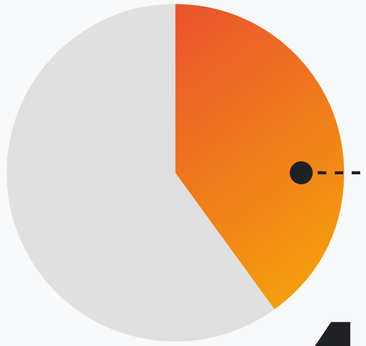
Top opportunities for AI adoption

While AI's transformative potential in game development is widely acknowledged, the survey highlights several key challenges developers face in successfully integrating it into their workflows.

Roughly one in four developers find it challenging to precisely measure the return on investment (ROI) and overall success of their AI implementations. A significant barrier is the cost associated with integrating AI tools, including the setup and ongoing maintenance.

94%

expect AI to reduce overall development costs in the long term (3+ years)



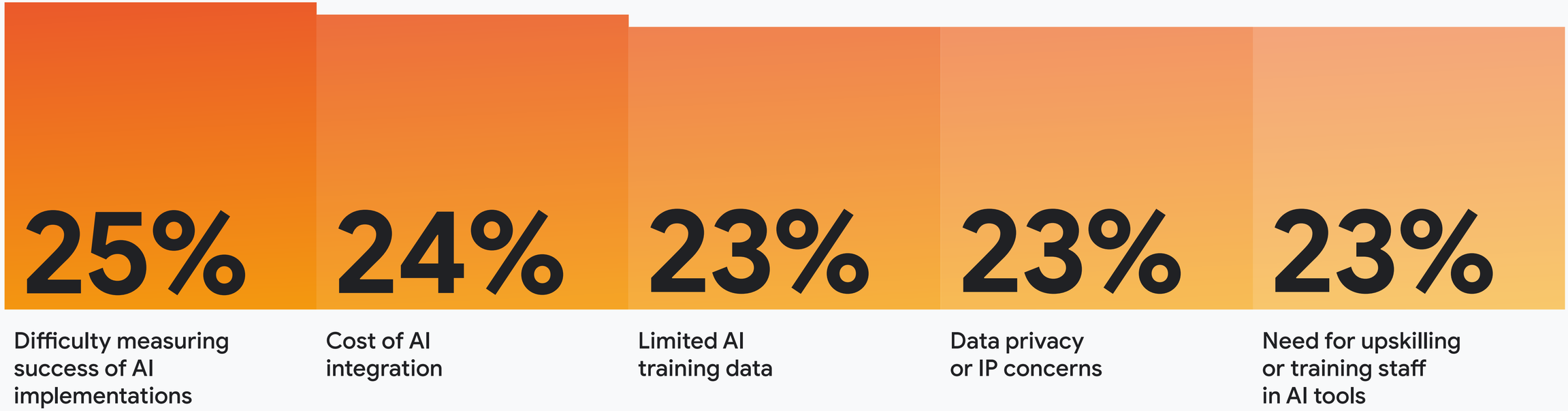
40%

say it is creating new business models or strategies

Practical limitations play a role, as well, with a quarter of developers lacking sufficient AI training data. In addition, developers recognize the need for upskilling and AI training to keep pace with the continuous evolution of the technology.

Despite these challenges, the long-term outlook for AI's business impact remains overwhelmingly positive. A striking 94% of developers expect AI to reduce overall development costs in the long term (3+ years). Furthermore, 40% of developers believe AI is already creating new business models or strategies, signaling its role as a powerful catalyst for innovation and new revenue streams.

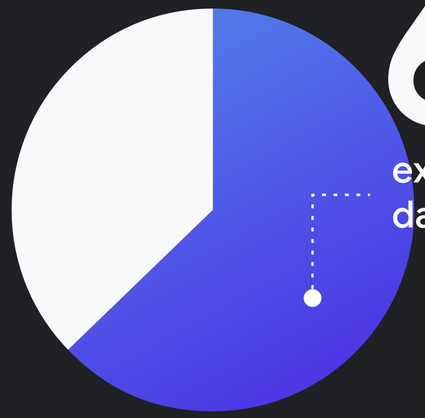
Top challenges in using AI



The ownership dilemma

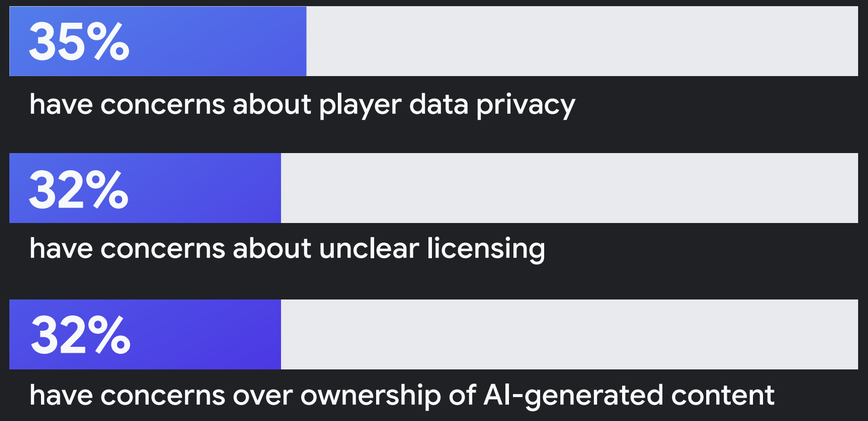
AI raises IP issues, while providing guarded optimism for healthier game environments.

Similar to many industries, AI has raised concerns over concepts like originality and attribution. Games are no exception, with 63% of respondents expressing concerns regarding data ownership with AI applications and games.



63%

expressed concern about data ownership and IP



The survey also reveals a number of potential risks and legal challenges. For example, 35% of respondents have concerns about player data privacy. Some also show uncertainty around who exactly owns AI-generated content, with 32% saying that licensing is unclear for AI-generated content, while 32% said ownership is unclear.

Can AI foster more responsible games?

On the other hand, developers are also seeing AI helping support responsible games. Roughly one in three see possibilities for AI helping with the following tasks:

01 Making monetization systems more transparent

02 Enhancing accessibility for players with diverse needs

03 Providing real-time player support and mental health resources

04 Improving the moderation of user generated content

When it comes to content moderation and community management, some also see AI as helping lower toxicity levels and providing a more supportive environment. In fact, 37% are currently using AI for this in their workflows. And 22% of them see it as the single area where AI might most enhance the player experience.

Opportunities in creating responsible games

Making monetization systems more transparent	32%
Enhancing accessibility for players with diverse needs	32%
Personalizing content pacing to avoid fatigue or frustration	31%
Providing real-time player support or mental health resources	31%
Improving moderation of user-generated content	30%

Next steps

When it comes to the implementation of AI, developers selected a number of best practices for moving forward:

01

Start small

40% recommend using small-scale pilots or testing before full implementation. Such an approach allows teams to identify potential challenges and refine processes before committing significant resources.

02

Align with creative vision

39% emphasized making sure that AI use reflected the creative vision and goals.

03

Invest in people

39% stressed the importance of providing training or upskilling for staff on AI tools.

04

Measure effectively

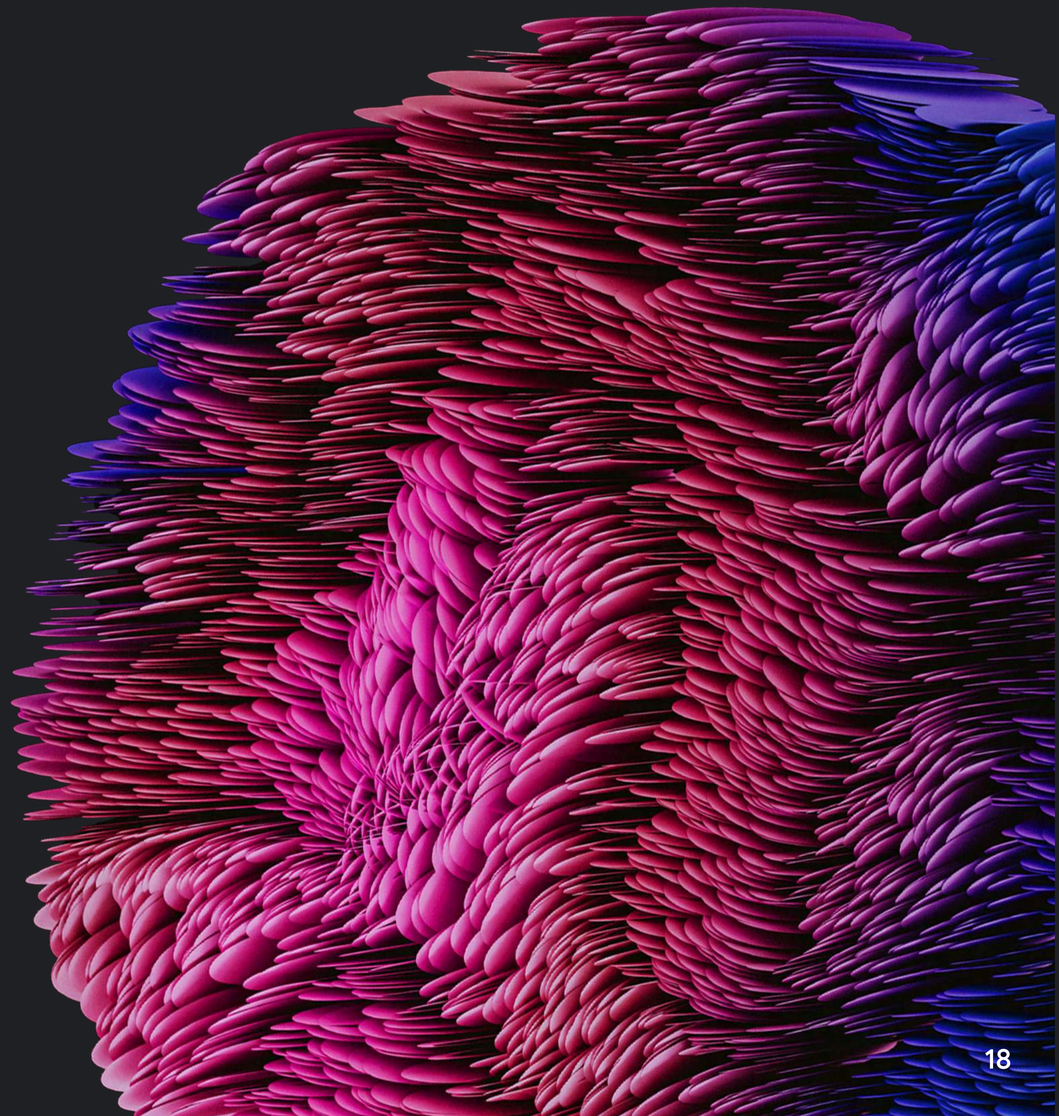
38% recommend establishing clear criteria for evaluating the success of AI implementations. Make sure you have agreed-upon success metrics so that you can understand what's working, what isn't, and quickly iterate to ensure that things go according to plan.

Conclusion

Overall, the research found widespread adoption of gen AI in the games industry—and a surprising level of optimism for it. AI is already making a big difference in developer workflows, including productivity and creative tasks.

Developers also see promising possibilities with AI agents and other emerging AI tools to accelerate game development and enhance player experiences.

And while developers raise important concerns about IP issues and the ownership of AI-generated content, the overall feedback on how AI can impact the holistic games industry is trending positive — with some even expressing that a more inclusive and democratic future lies ahead.



Methodology

The research was conducted online in the United States, South Korea, Finland, Norway, and Sweden by The Harris Poll on behalf of Google Cloud among 615 adults age 18+ working in game development. The survey was conducted June 20, 2025 - July 9, 2025.

Raw data were not weighted and are therefore only representative of the individuals who completed the survey. The sampling precision of Harris online polls is measured by using a Bayesian credible interval. For this study, the sample data is accurate to within ± 3.9 percentage points using a 95% confidence level. This credible interval will be wider among subsets of the surveyed population of interest.

All sample surveys and polls, whether or not they use probability sampling, are subject to other multiple sources of error which are most often not possible to quantify or estimate, including, but not limited to coverage error, error associated with nonresponse, error associated with question wording and response options.