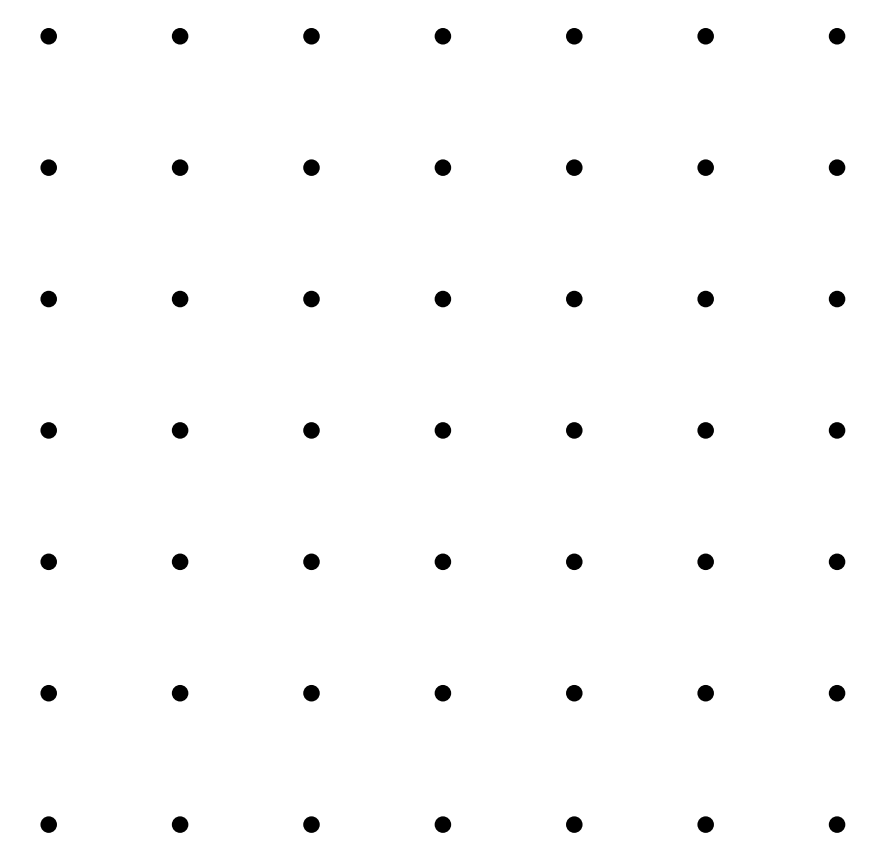
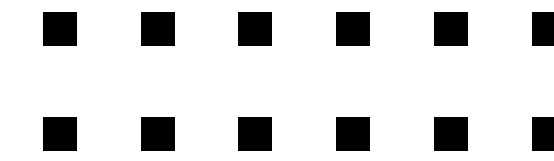


The State of Games QA

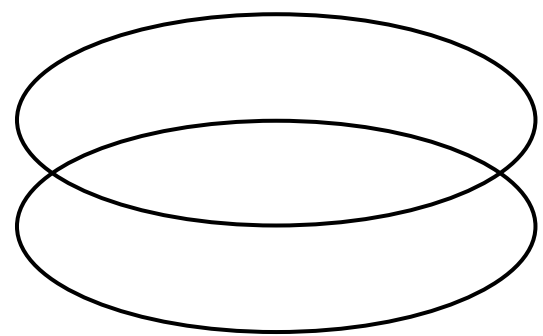
Presented by modl.ai

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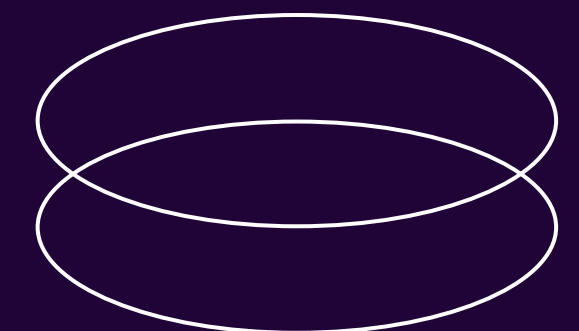
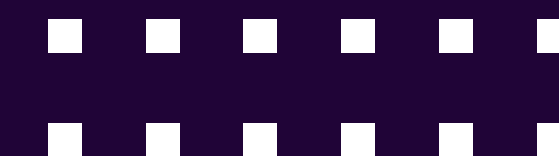


Introduction

This report aims to provide a comprehensive overview of the current state of quality assurance (QA) in game development, drawing on survey insights from games industry professionals. It delves into key trends, challenges, and emerging technologies, focusing on the role of automation and artificial intelligence (AI) in QA processes. Thanks to the help of our expert contributors, the report offers actionable takeaways and forward-looking perspectives, guiding QA professionals on how best to evaluate and integrate AI solutions into their tech stack effectively.

The rapid growth in game complexity and the industry's shift toward accelerated development cycles have introduced new and pressing challenges for QA teams. As studios increasingly explore automation and AI to address these issues, we aim to provide valuable insights to help navigate these innovations. In authoring this report, we sought to empower game developers to enhance game quality, improve release stability, and maintain efficiency in the rapidly evolving game development landscape.

From all of us here at modl.ai, thank you for your time and attention.



Executive summary

Modern game quality assurance teams are overwhelmed.

They need help to meet the increasingly complex demands of modern game development, especially concerning games-as-a-service (GaaS). QA processes are up against technical and production limitations, creating a gap between what is needed and what traditional methods can deliver.

QA teams see AI as a solution.

There is near-unanimous agreement that AI is uniquely suited to address the challenges posed by modern game development. Beyond its technical advantages, AI is also seen as a financially viable solution to meet the growing demands on QA teams when resources are limited.

Developers are ready, but challenges remain.

While developers are actively exploring how to integrate AI into their workflows, finding clear paths to adoption continues to be a challenge. Technical complexity remains a significant barrier to widespread implementation.

Key takeaways

77%

of developers say they conducted less QA than they should have for their studio's most recent release.

50%

of developers don't think that QA budgets are growing fast enough to keep pace with the increasing complexity of modern games.

94%

of developers believe AI will play an important role in the future of game QA

51%

of game developers would be more interested in working at a studio that uses AI for QA.

18%

of developers feel their studios are fully prepared to implement AI in all QA processes.

Methodology

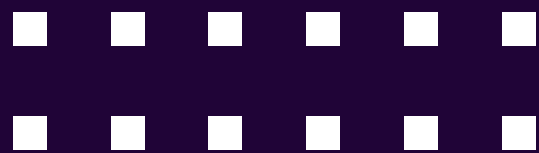
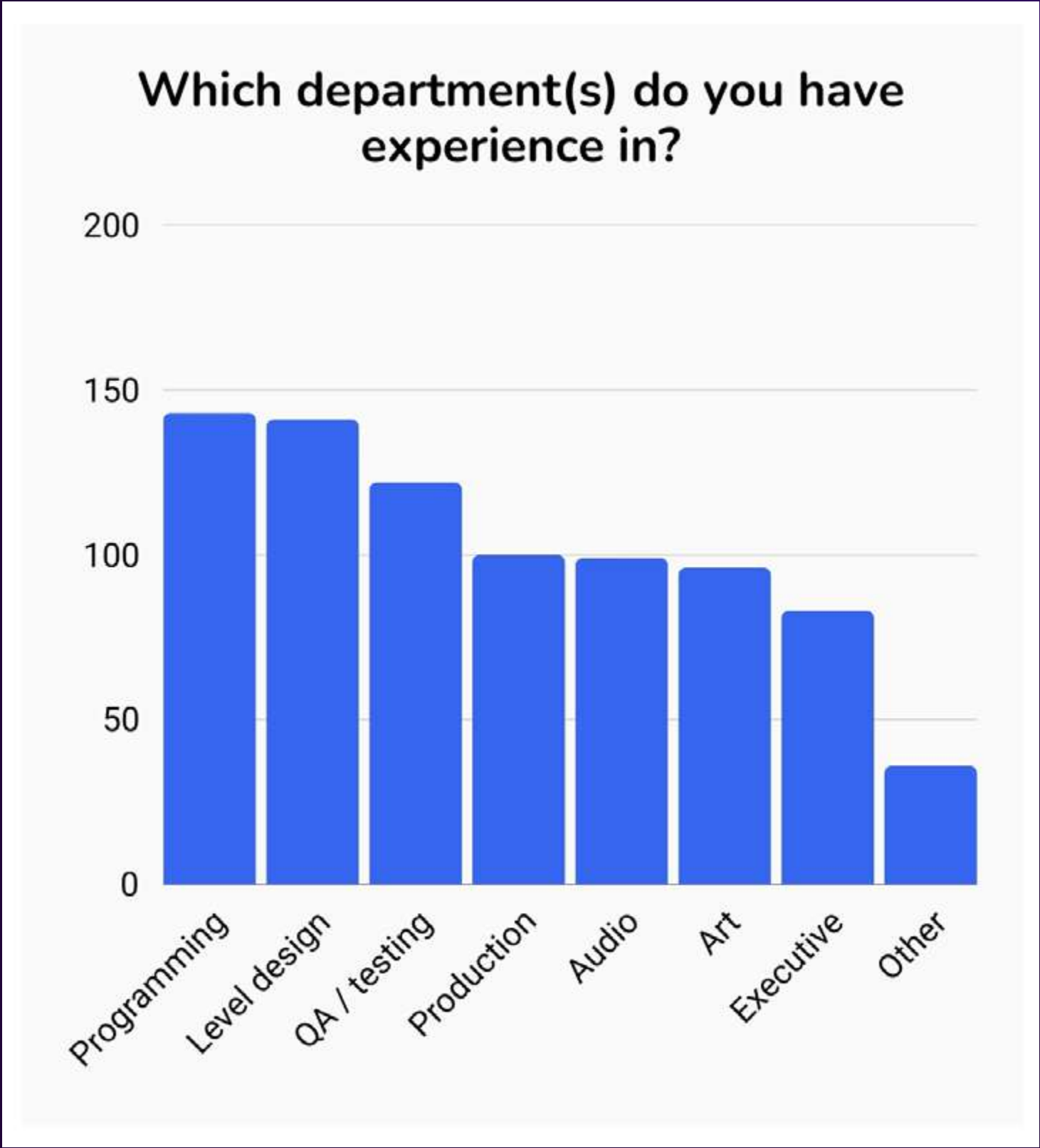
303 games QA professionals surveyed

4 contributing experts interviewed

In September 2024, modl.ai surveyed 303 US-based professional game developers to better understand the state of QA in modern game development.

Respondents represented a balanced cross-section of key game development departments, including QA, production, art, programming, game and level design, audio, and studio leadership. Responses were gathered through an incentivized survey platform.

A panel of four contributing experts interviewed regarding the survey findings. Their perspectives have been incorporated into the analysis, with the most relevant quotes included throughout to enrich the findings and provide expert context to the results.



Our contributing experts



Rob Sandberg

Game Production Executive

Formerly of Reliance Games, Product
Madness, Gram Games



Dajana Dimovska

CEO of Indium Play

Co-CEO of NapNok
Games



Ben Wibberley

**Founder & Managing Partner,
Digital Age Quality Assurance**

Formerly of Jagex, VMC, Keywords



Henry Golding

Senior Test Engineer at Netflix

Formerly of Rare, Epic,
Microsoft

modl.ai

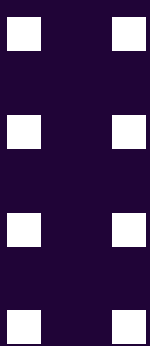
QA today

Balancing resources, priorities, and automation

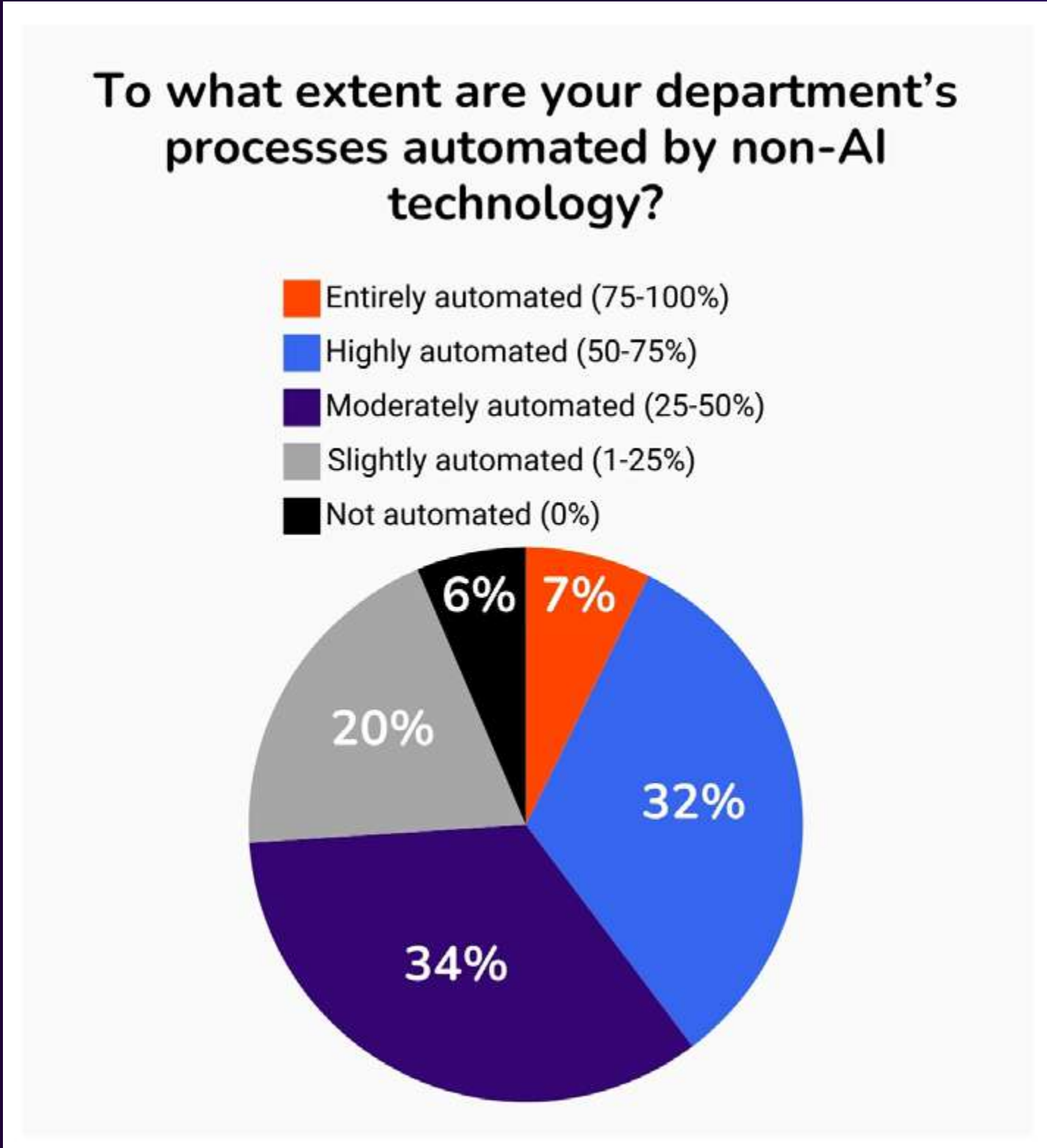
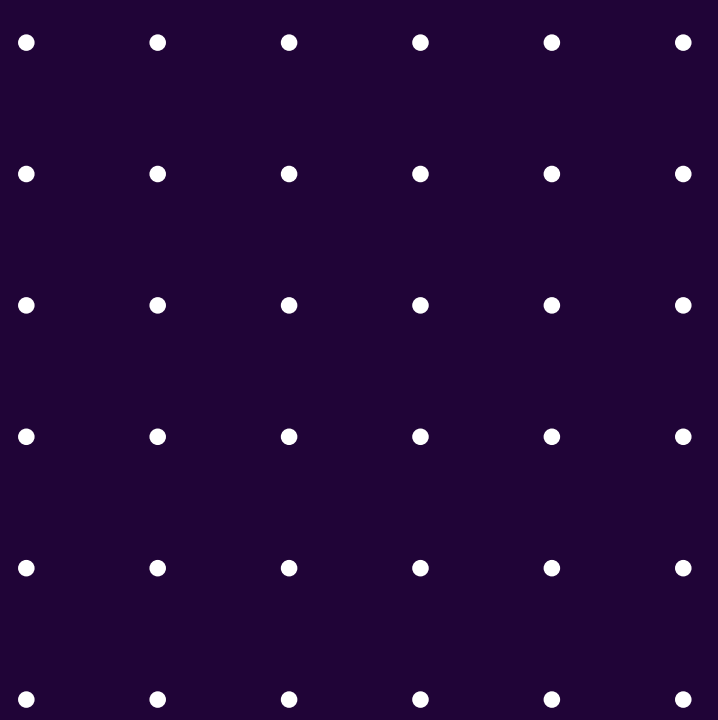
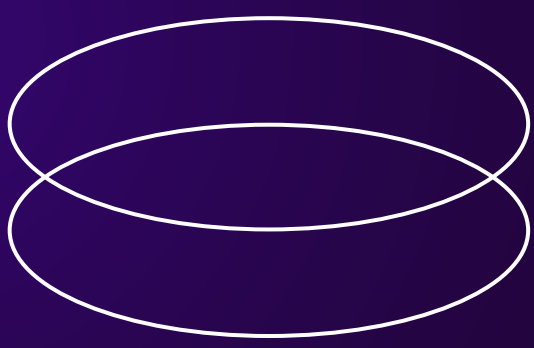
Survey responses show that modern game QA is evolving, with automation playing an increasingly critical role — streamlining repetitive tasks and enabling teams to focus on solving complex issues. Despite these advancements, challenges like limited budgets, tight schedules, and game complexity persist, often leading to under-tested releases. Experts advocate for proactive QA strategies that can help earn buy-in from leadership and help them prioritize the most impactful fixes to improve game quality and overall player satisfaction.



Automation levels in modern QA



94% of game developers say their studios have already incorporated some form of non-AI automation into their QA workflows. Common types of automation include test scripts, automated bug reporting, and playtesting automation.



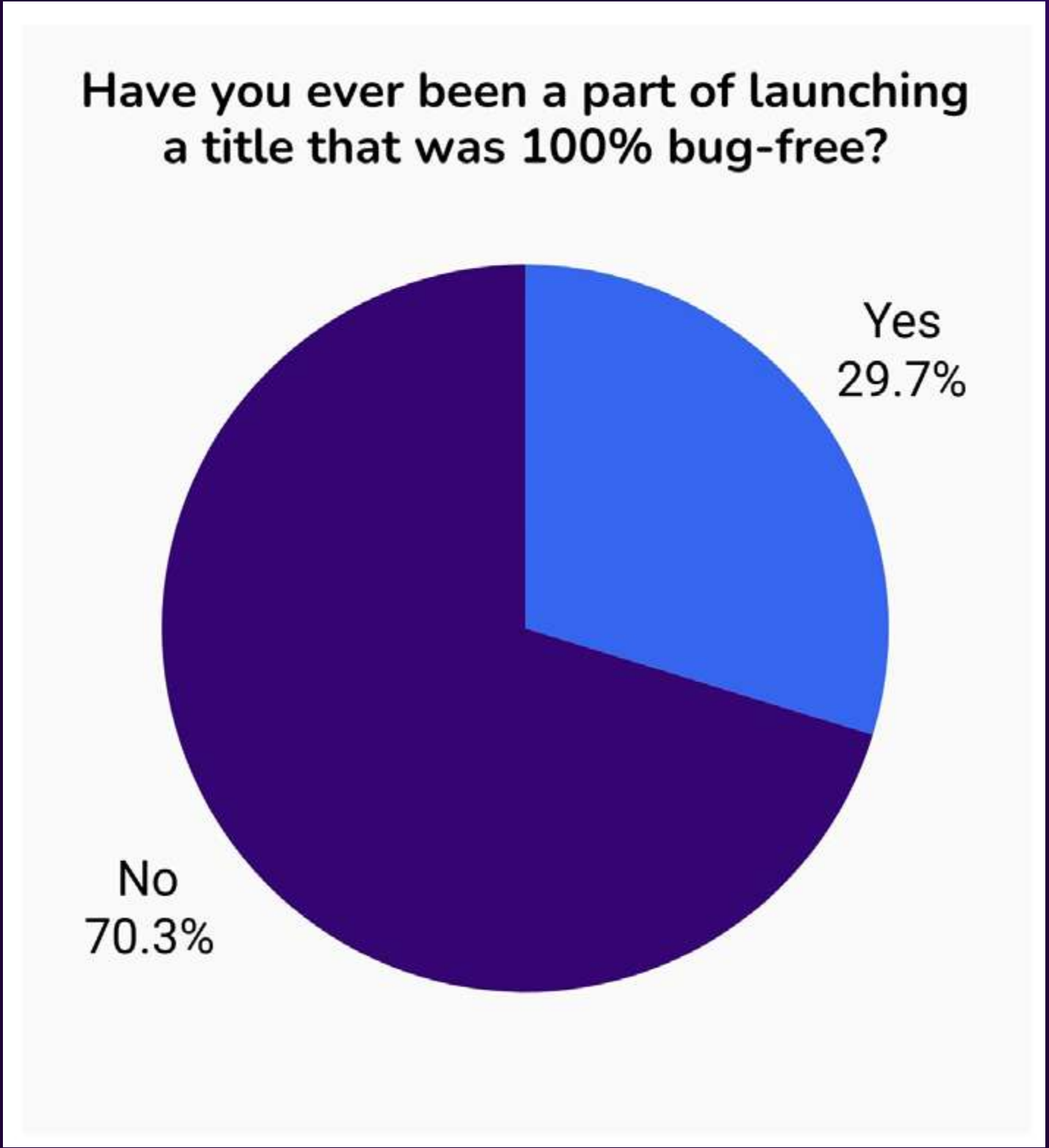
Expert Insight: Henry Golding

"My hope is that in the years to come, developers understand more and more that without robust automated testing and quality checks built into your development process, that you're really just leaving money on the table in terms of the ability to iterate faster and release more safely."

"I think it depends on expanding the concept of what we consider a game engine. Instead of just being a tool to make games, it becomes the whole development process. It's a whole ecosystem and environment, and that includes automation."

Challenges in achieving bug-free games

70% of game developers who answered reported never launching a completely bug-free game, reflecting the persistent difficulties in maintaining flawless releases.

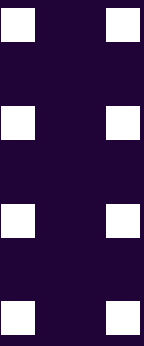


Expert Insight: Dajana Dimovska

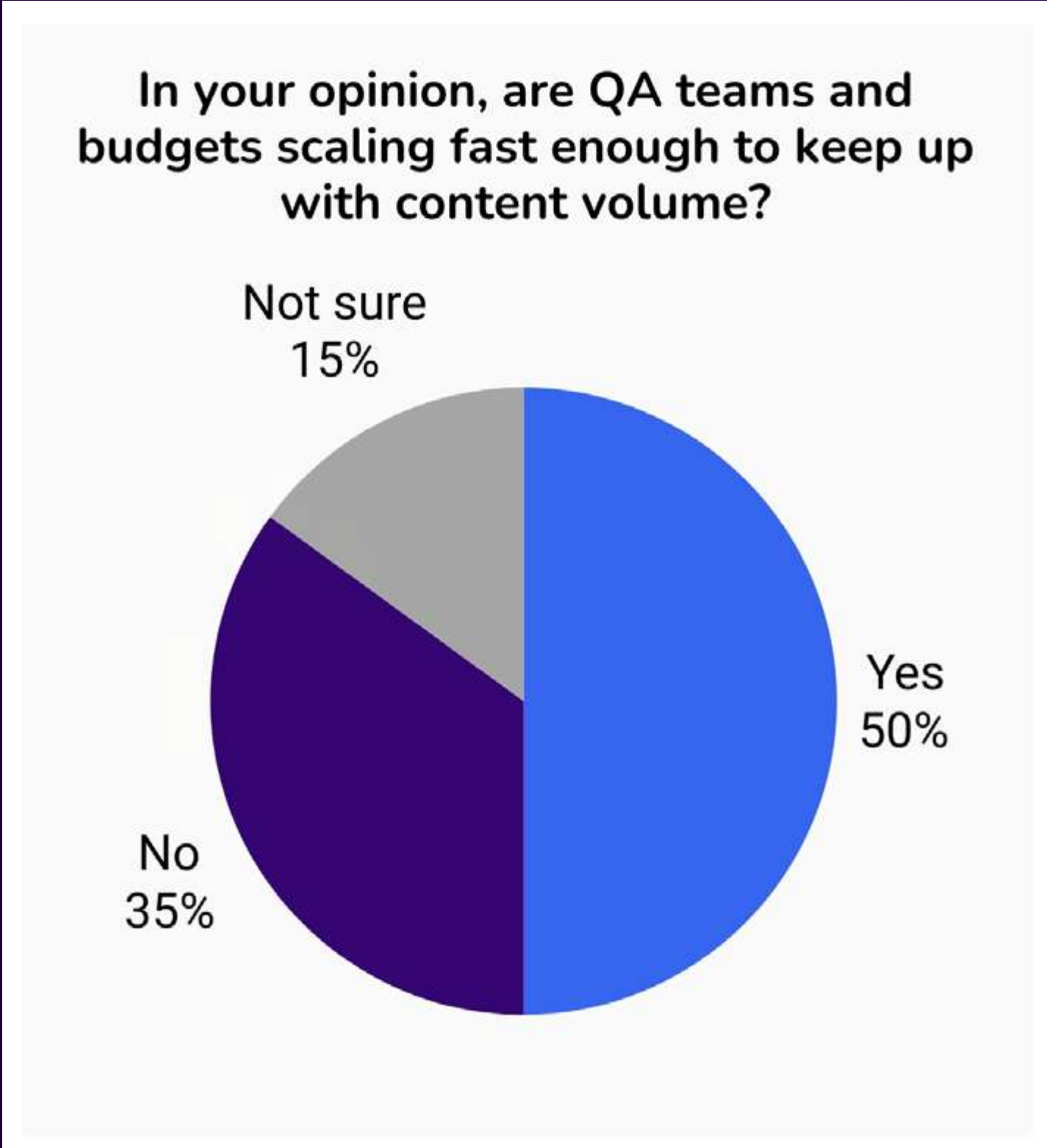
"You're never going to catch every bug, but AI can get you closer. It can take on early testing responsibilities, reducing the need for large QA teams throughout the production phase."

As the game reaches a more playable and polished state, manual QA testers step in — working alongside AI to identify and address quality issues. This collaboration between experienced testers and AI ensures a better final product."

Concerns for the financial support of QA



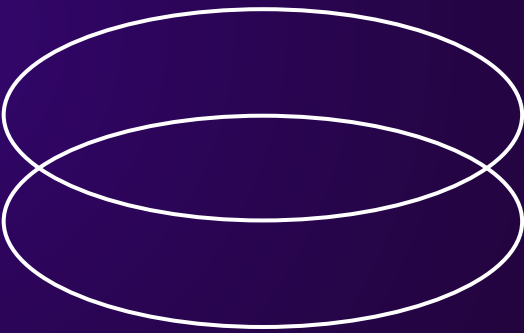
50% of game developers are unsure or don't believe that QA budgets are growing fast enough to keep pace with the increasing scale and complexity of modern games.



Expert Insight: Ben Wibberley

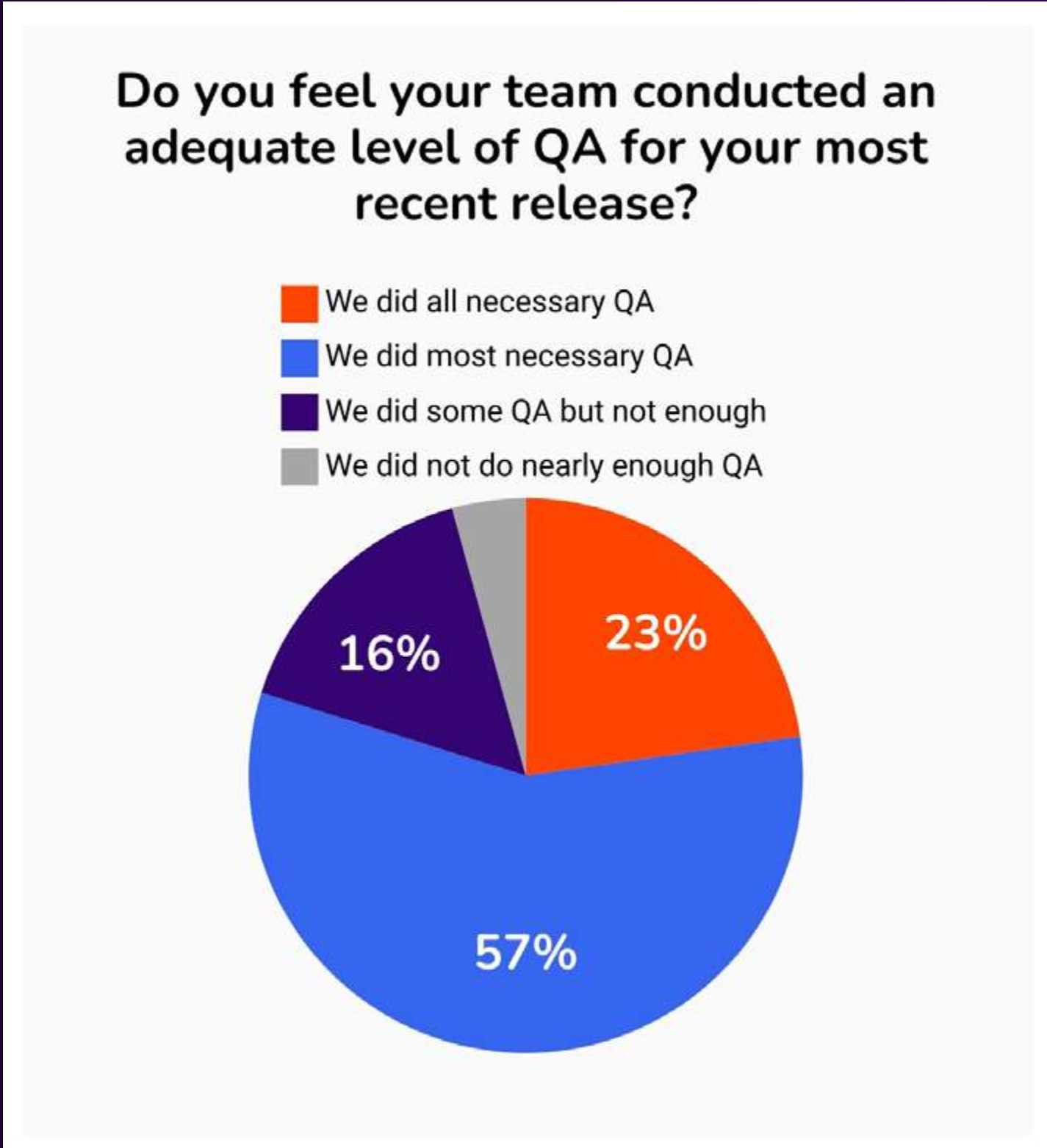
"In the relentless cycle of live game services and frequent content drops, the one thing studios cannot typically buy is time. Adding more people doesn't always solve the problem, especially if inefficiencies in the QA process persist."

To secure budget, the focus must be on tools that make QA processes more efficient and save testers from mundane, repetitive tasks like recreating bugs, ultimately maximizing the limited time available."



Not enough QA is being done

77% of developers feel they conducted less QA than they should have for their studio's most recent release, often citing time and resource constraints.



Expert Insight: Rob Sandberg

"The smart developers are the ones who shift left – the ones who have the QA team in the development phase. They're not testing all the features when they get dumped off to them as a functional test. They're doing development-level testing."

You don't need 10 or 15 testers doing that. You need one or two, and they should be embedded in your team's Software Development Life Cycle (SDLC) throughout development, not just at the end of a milestone."

The modl.ai perspective

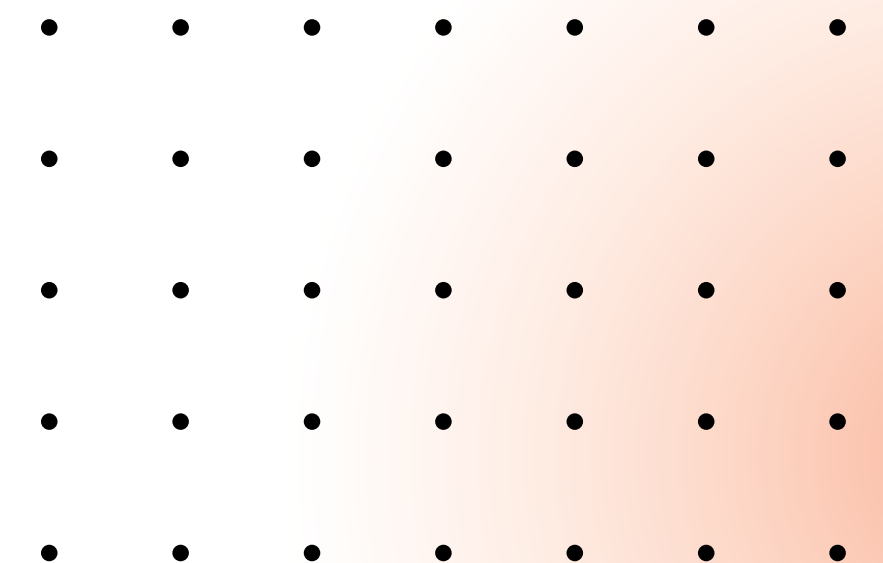
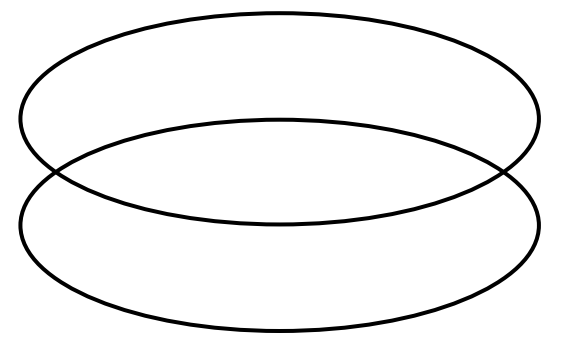


Benedikte Mikkelsen, CPO & Co-founder, modl.ai

“We have game developer backgrounds at modl.ai, as well as deep AI knowledge. It’s a unique combination that we’re proud to offer. We optimize our products to interact with the game from ‘the player’s perspective’ to the largest possible degree.

One key objective of our AI tools is to enable frequent, early automated testing during development. Catching issues early reduces the cost of fixing them, as bugs discovered later are often far more expensive — or even impossible — to resolve. Scaling team output with AI tools allows QA efforts to keep up with growing needs.”

Learn more at modl.ai



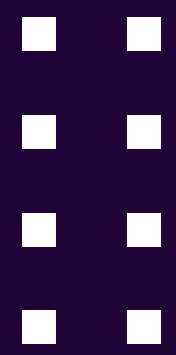
QA today

Embracing AI-driven efficiency

AI is poised to revolutionize games QA by handling repetitive, tedious and data-heavy tasks, freeing human testers to focus on creative and exploratory work where human involvement makes a big difference. Experts agree that combining automation with manual testing will enhance the efficiency, accuracy, and appeal of QA roles, making them more respected and higher paid.

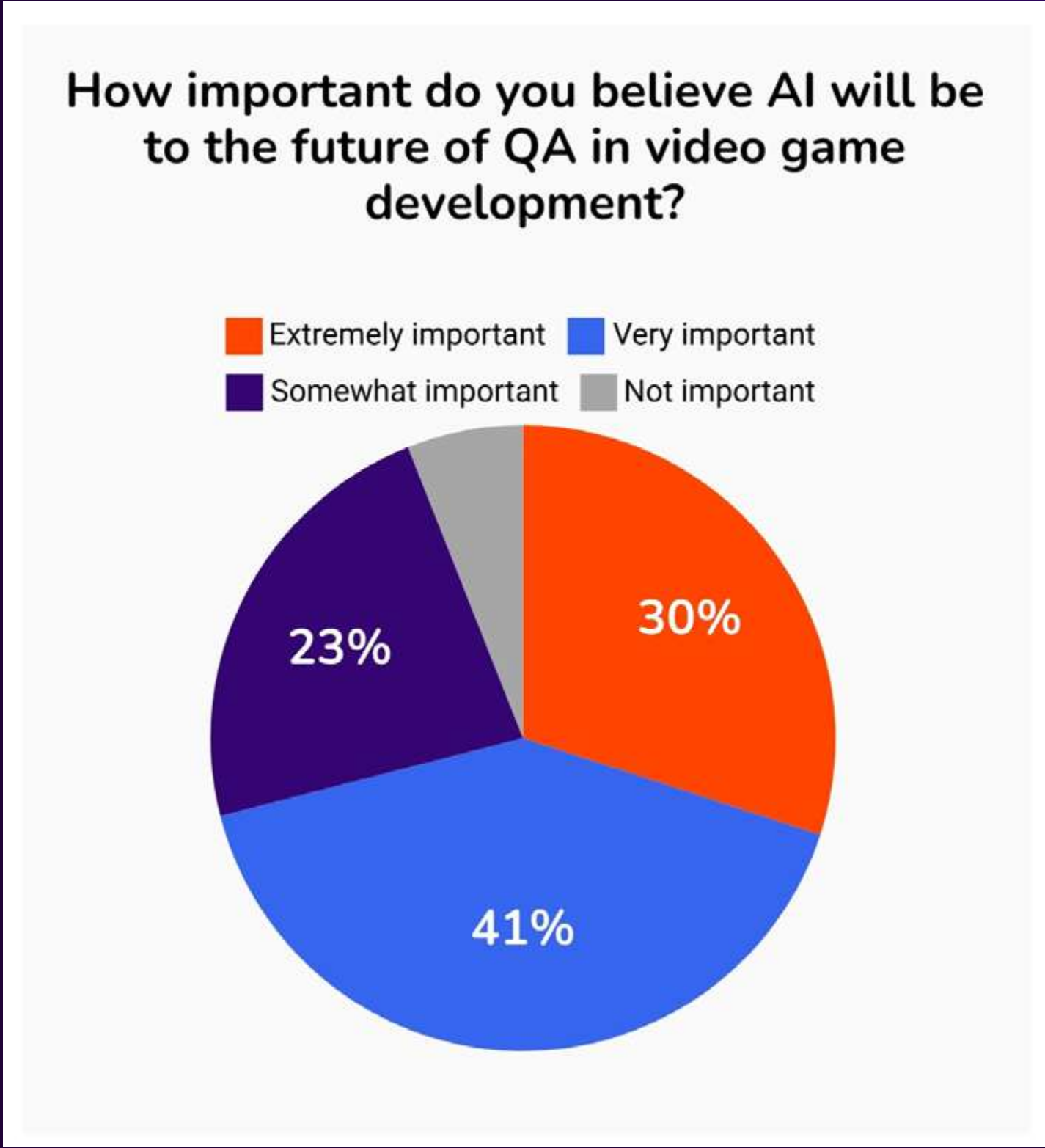
Impactful AI applications include stress testing for live services, usability testing, and predictive analysis to anticipate potential issues. AI excels at scaling tasks like simulating up to thousands of players for performance tests, a feat unattainable by manual methods. Experts emphasize that AI complements human intuition rather than replacing it, enhancing coverage, speed, and accuracy while catching bugs before they get into production and shortening development cycles. By integrating AI, studios can accelerate iteration, improve game quality, and streamline production timelines.





Importance of AI to the future of QA

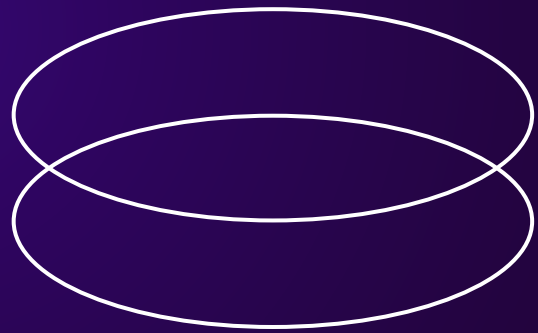
94% of game developers agree that AI will play an important role in the future of game QA.

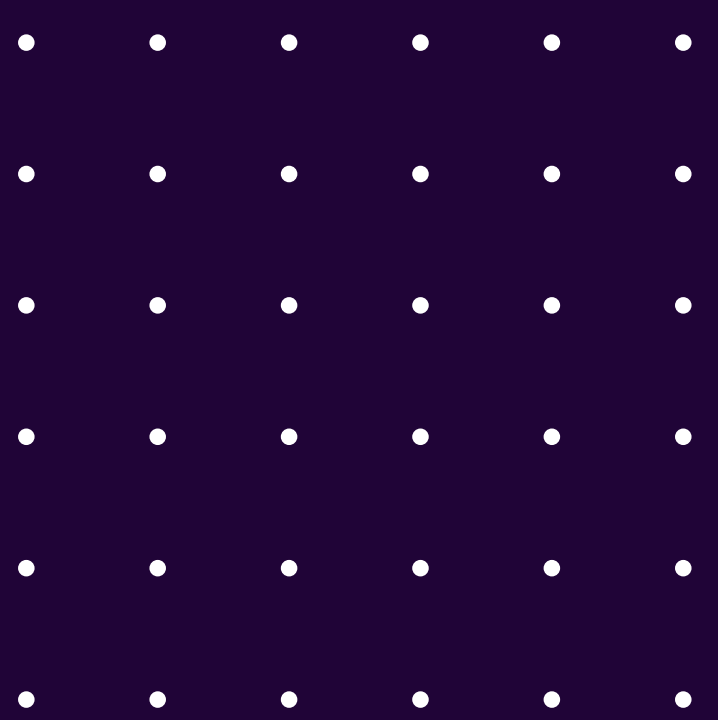
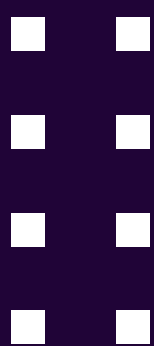


Expert Insight: Dajana Dimovska

"From the research we've done, we definitely see the future QA as involving a combination of manual and automated testing. We're focused on keeping our team small, experienced, and learning to work with data more effectively."

This will be the future for many teams, and will depend on the ability to run smaller tests more frequently. That includes navigating levels, running smoke tests, performing pattern recognition, and ensuring functionality without encountering bigger issues."

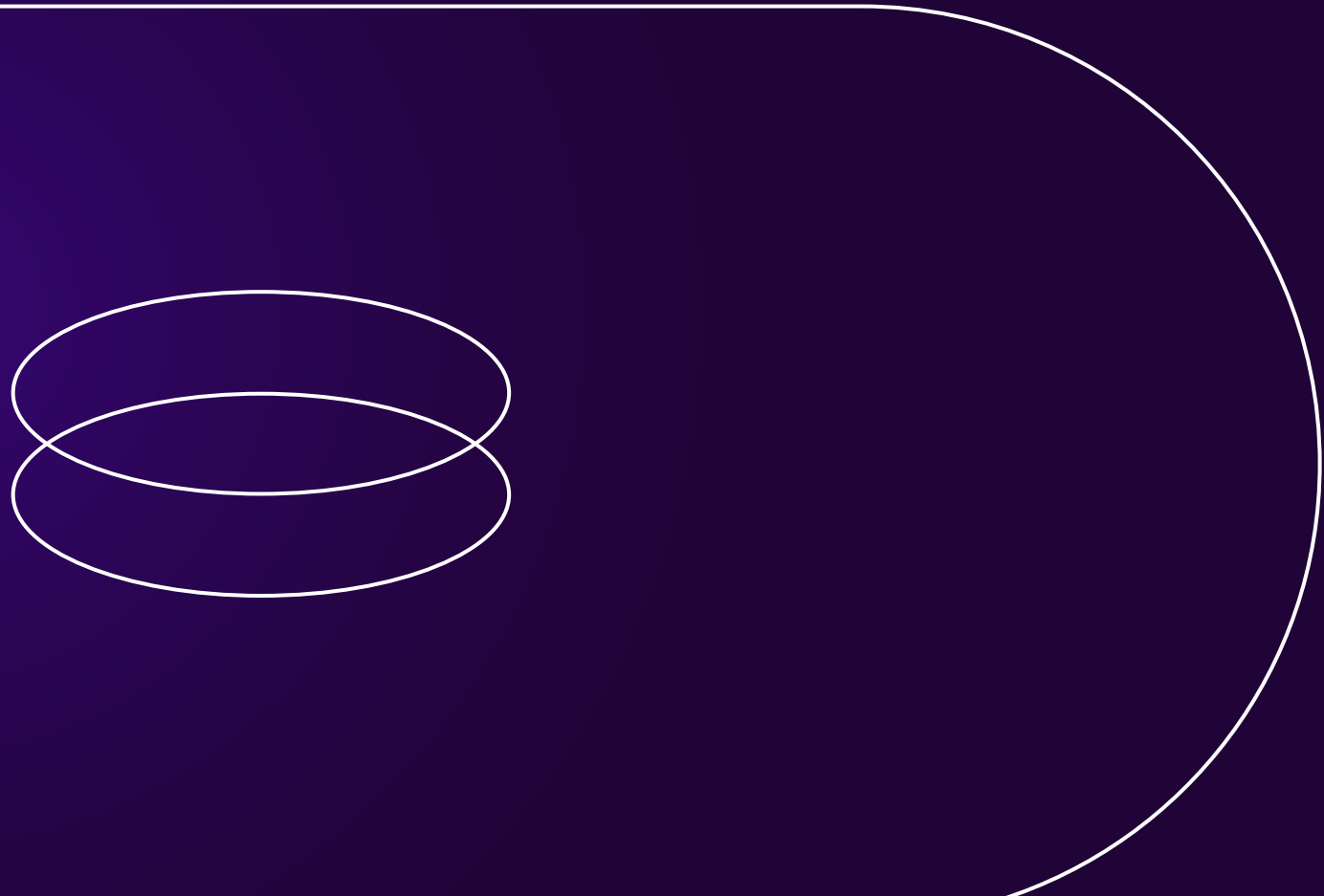




Best uses of AI in games QA

Faster bug detection is where developers see the most potential for AI to excel in QA. Of all the use cases identified, the top three were:

- 1. Faster bug detection
- 2. Automated bug reporting
- 3. 24/7 testing capabilities



What do you consider to be the greatest advantages of AI in QA?

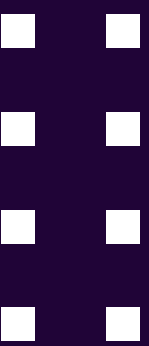
Answer	Mean ranking
Faster bug detection	3.49
Automated bug reporting	3.6
24/7 testing capabilities	3.61
Parallel testing	4.16
Higher test accuracy	4.28
Cost savings	4.37
Complex scenario testing	4.5



Expert Insight: Ben Wibberley

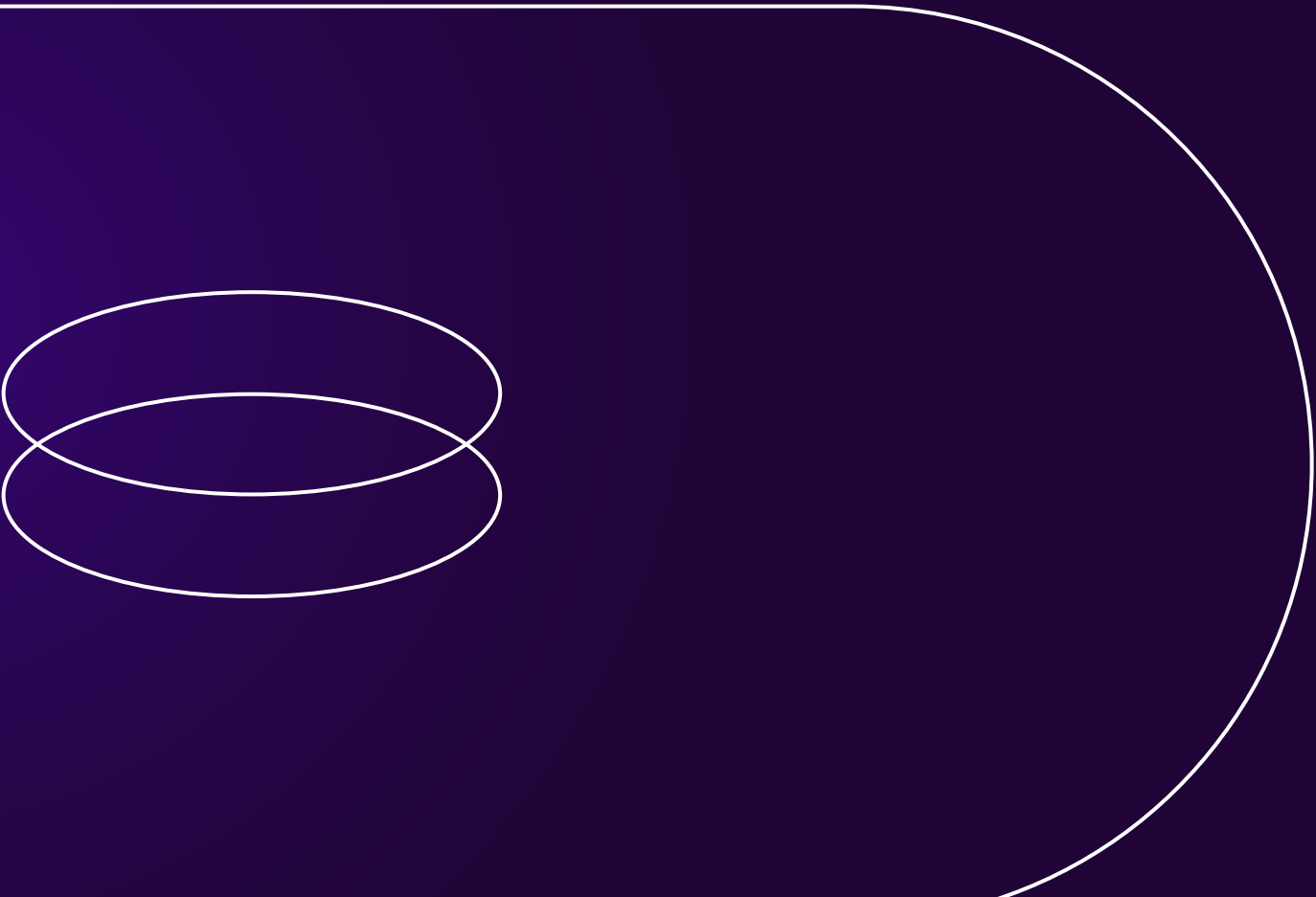
“With automation – whether at the code level or content level – you can release new content with confidence, knowing it won’t disrupt your last known good. Automation provides that essential layer of assurance, continuously verifying that the core game experience remains intact as updates roll out. This lets QA teams catch issues early, protecting stability and allowing us to focus on delivering quality enhancements rather than revisiting past fixes.”

Additional uses of AI in QA



Of all the possible use cases for AI in QA other than bug detection, the top three according to developers, were:

- 1. Bug detection
- 2. Stress testing
- 3. Usability testing



In which areas of QA do you think AI excels the most?

Answer	Mean ranking
Bug detection	2.71
Stress testing	2.91
Usability testing	2.99
Predicting potential issues	3
Regression testing	3.4



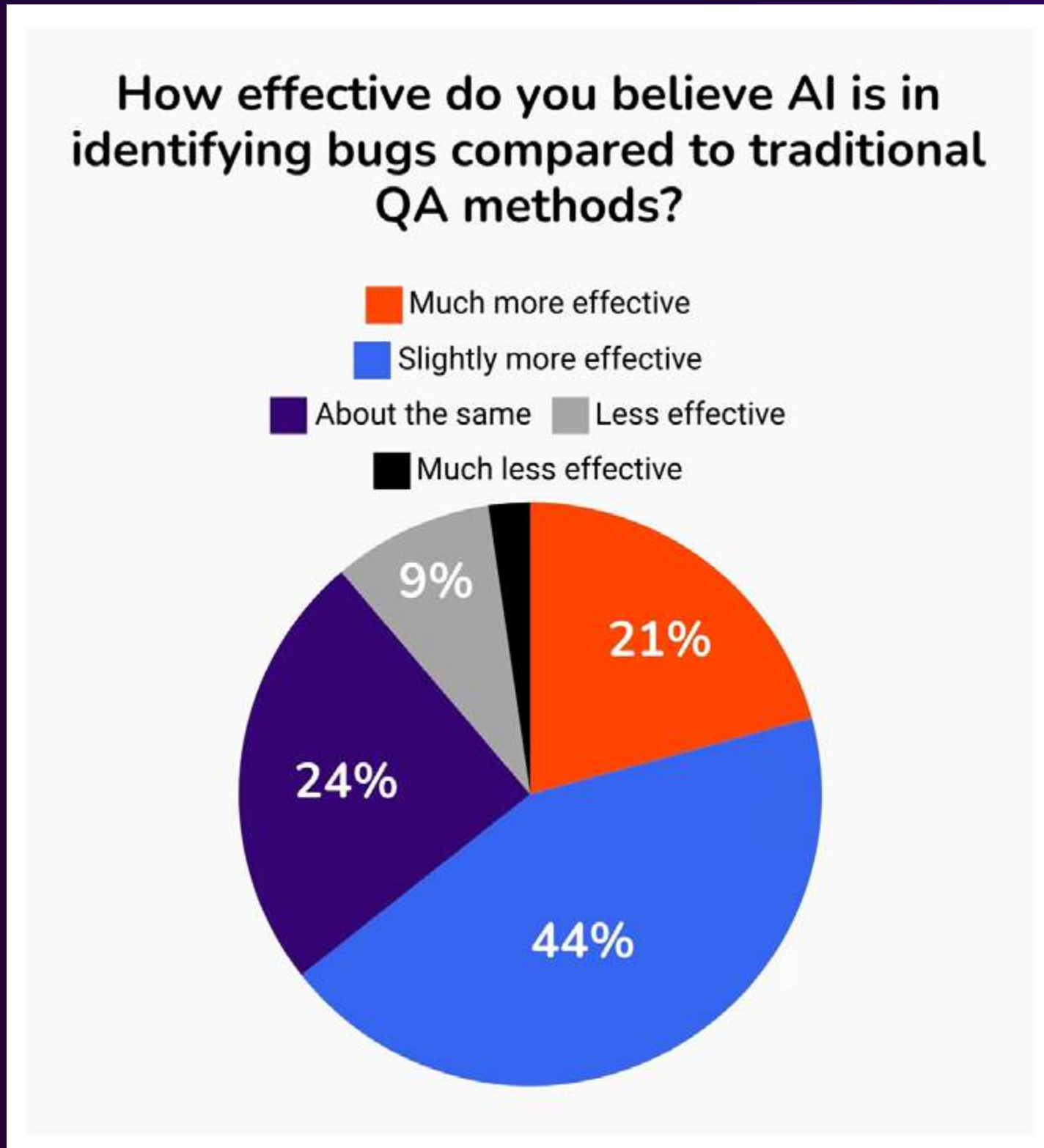
Expert Insight: Rob Sandberg

“Beyond bug tests, AI excels in detecting aberrant behaviors, such as identifying cheaters by learning from and analyzing exploit patterns, offering great potential for improving game security and experience.”

Large language models are also highly effective at generating test cases and acceptance criteria, even uncovering edge cases that might otherwise be missed by human testers, making them invaluable tools for QA efficiency and thoroughness.”

Effectiveness of AI for bug detection

88% of developers believe AI is as good or better at identifying bugs than traditional methods.

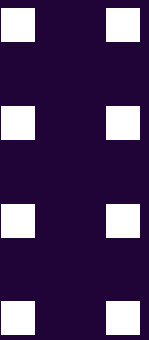


Expert Insight: Dajana Dimovska

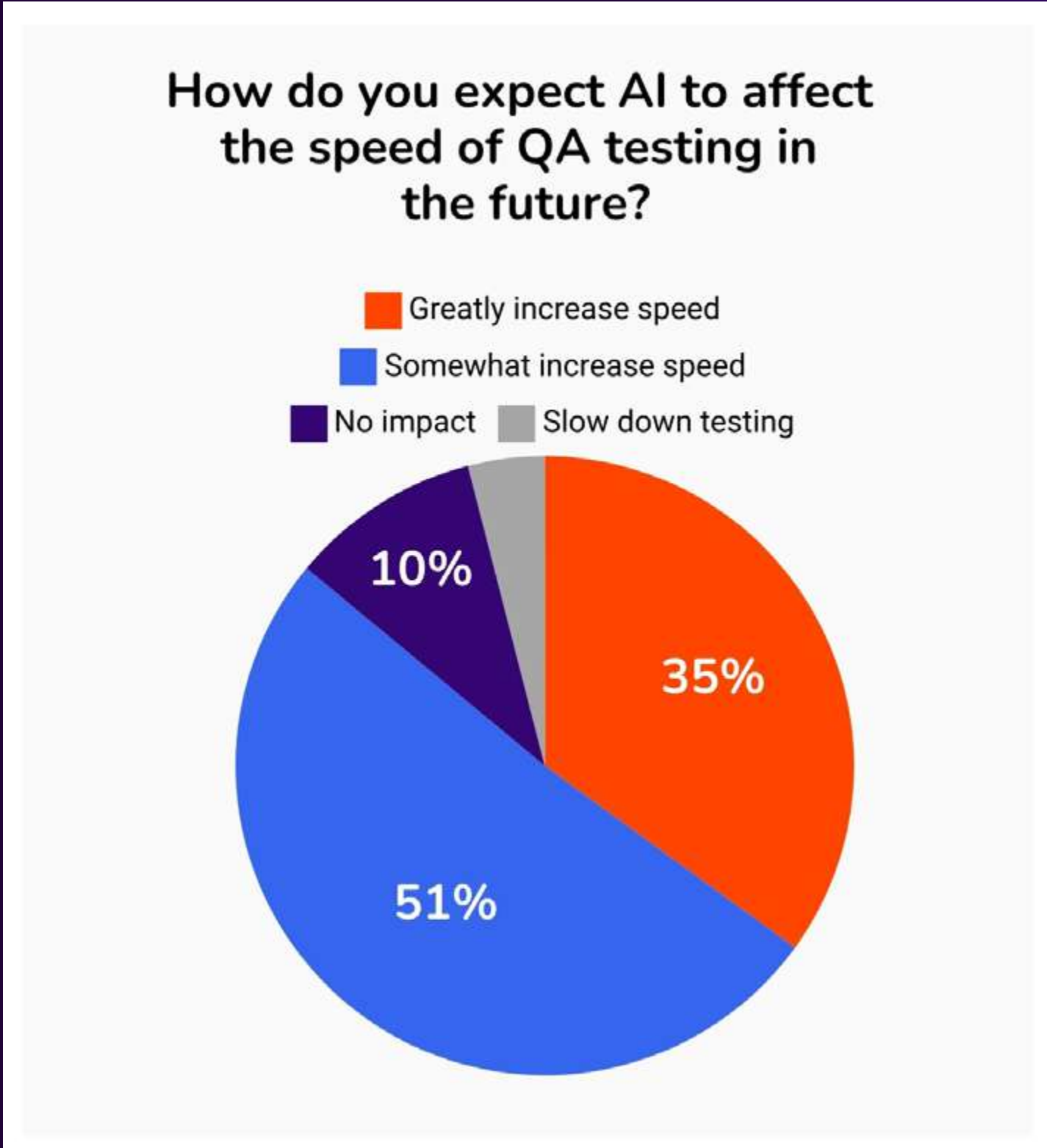
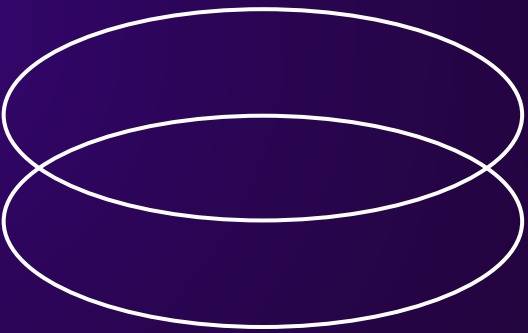
“There are certain tasks, let’s call them imitation tasks, that I think AI testing bots are pretty close to being 100% effective for. For example, smoke tests where a bot plays through the game to ensure it can be completed without crashing – those are areas where automation really excels.

That said, I don’t think we will ever fully replace human behavior. That kind of intuitiveness and creativity, I just don’t believe so. That’s required for getting the feel and balance right.”

Increased detection speed



86% of developers believe that AI will increase the speed of QA testing, allowing for quicker iteration and shorter development cycles.



Expert Insight: Rob Sandberg

“Using automation and employing the shift-left technique to move testing earlier in the development cycle — integrating QA from the start — helps to prevent bugs from ever being introduced.

Studios can reduce a three-week process to just two days. In fact, I recently spoke to one of my old colleagues, and they’re now aiming to release the release candidate in the morning and push to app stores by night, relying on quick smoke tests to ensure readiness.”

Bridging the gap

Increasing AI adoption

The gaming industry is eager to adopt AI in QA, with most developers expressing readiness to implement AI-driven processes. However, successful adoption requires a phased approach, starting with automating repetitive tasks and building trust and expertise within QA teams.

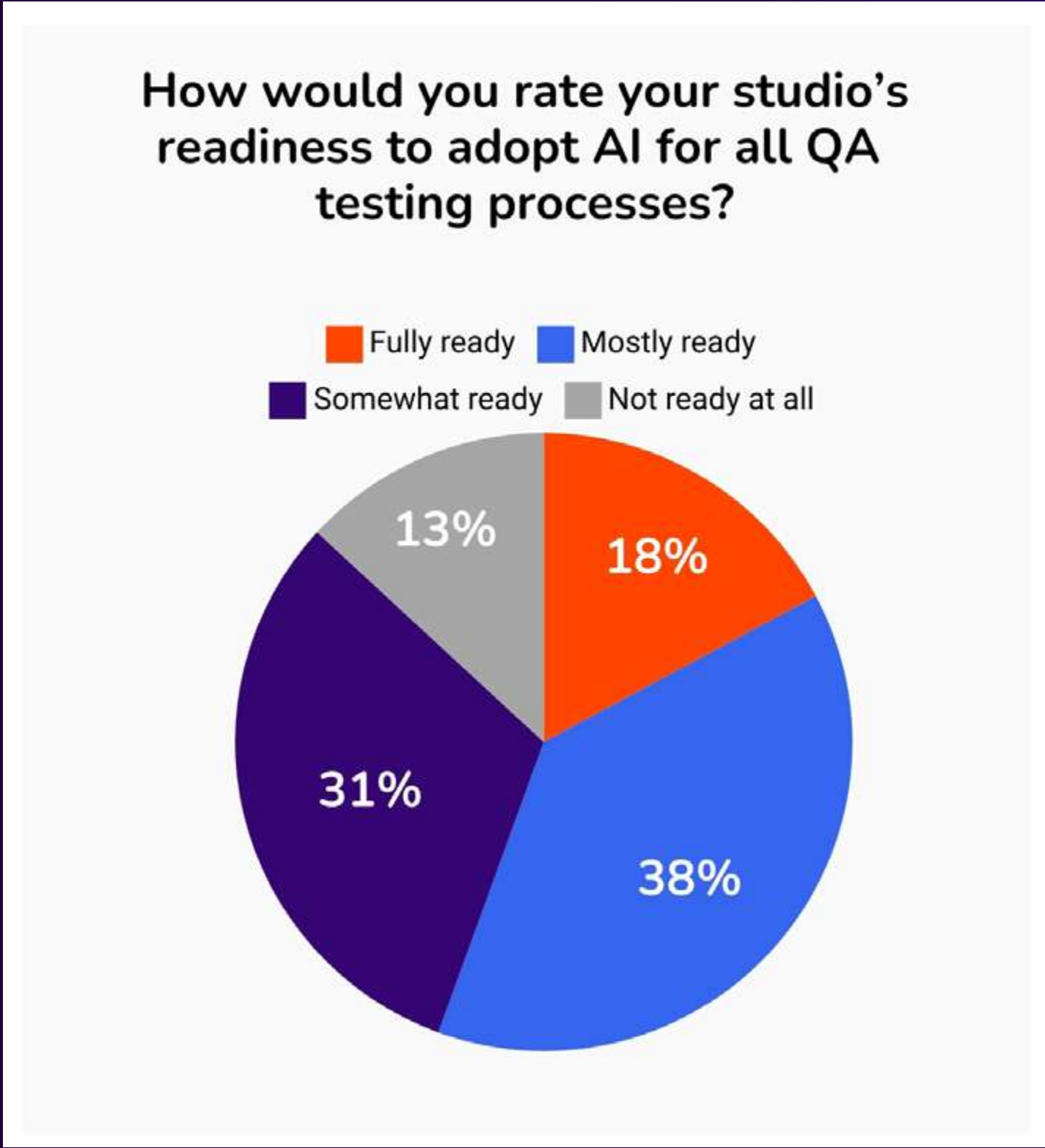
While most developers trust AI-generated results, some remain skeptical due to concerns about human intuition, false positives, and inconsistent outputs. Experts emphasize that AI works best as a complement to human testers, enhancing their capabilities rather than replacing them.

AI adoption also enhances studios' appeal to talent by signaling a commitment to efficiency and reducing crunch. However, challenges like setup complexity, initial costs, and resistance to change must be addressed, with a focus on clear ROI and seamless integration into existing workflows.



Industry readiness

87% of game developers feel their studios are at least somewhat ready to implement AI in all QA processes, pointing to an industry eager to benefit from AI.

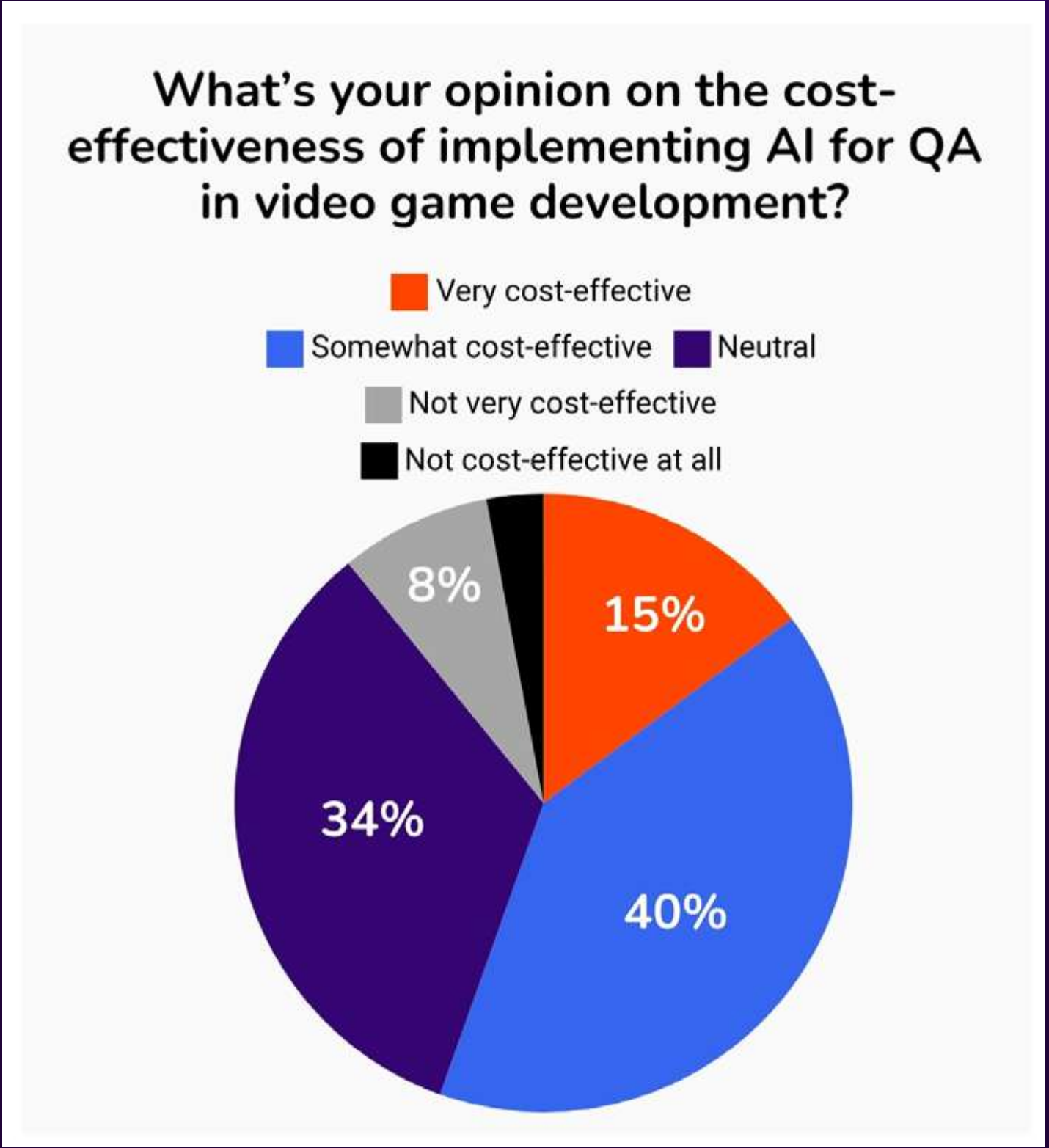


Expert Insight: Henry Golding

"I think it will be the bigger studios that end up leading AI adoption. They have large teams of technical staff and the capability to introduce new tools into their existing suites. The budget is there to try things. I expect that in the coming years, we'll find out what works and what doesn't, and I look forward to hearing from those folks who end up doing some very cool things."

Cost-effectiveness

89% of QA professionals believe AI could be a cost-effective/cost-neutral tool when implemented properly, addressing concerns about budget limitations.



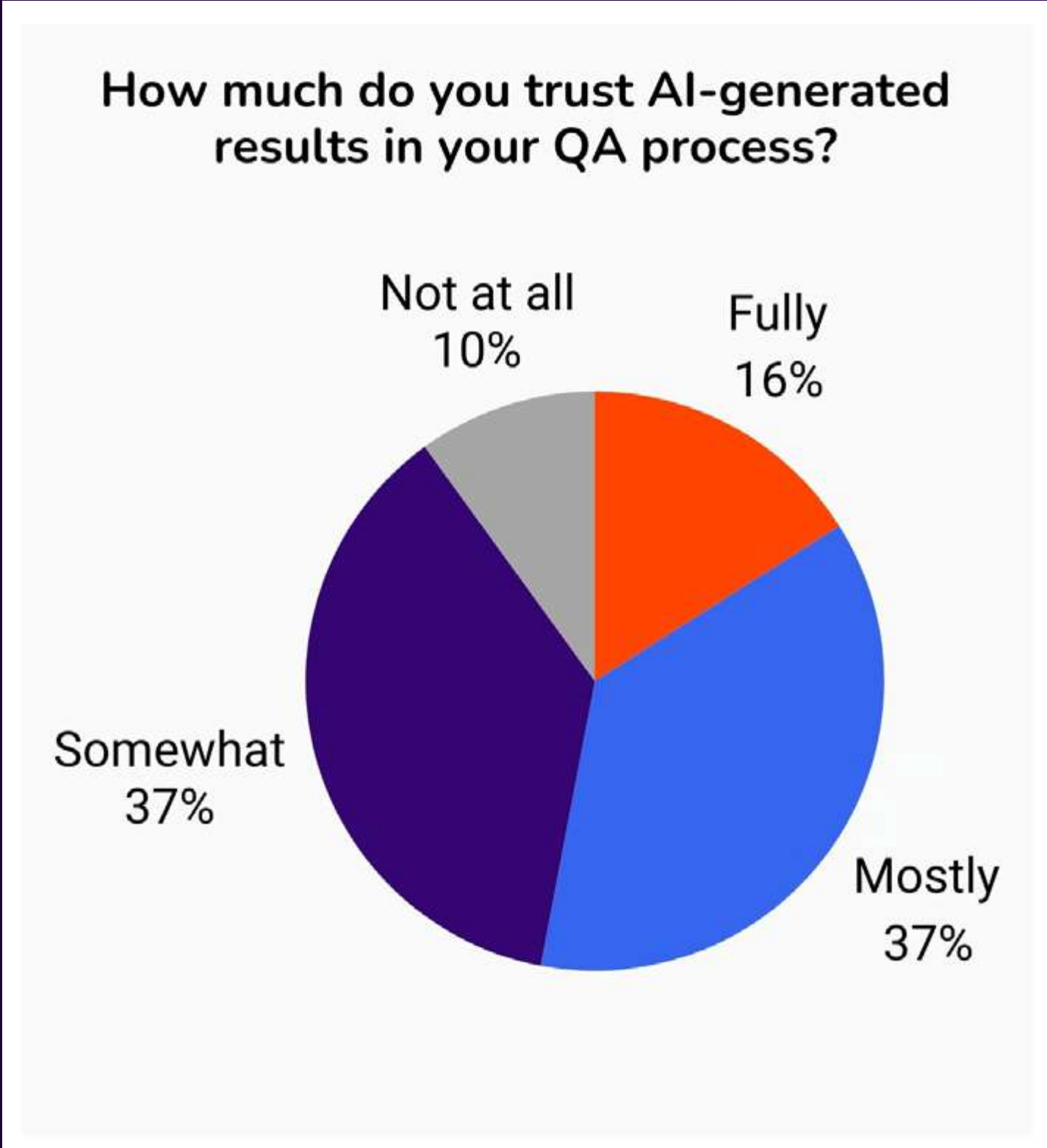
Expert Insight: Ben Wibberley

"AI's value is in augmenting our teams so they can work smarter and faster, validating decisions and handling the rapid pace of new content."

By handling repetitive tasks and scaling up our testing efforts, AI lets us focus on complex, experience-driven testing that elevates gameplay without being held back by the volume of updates. It's about enabling QA to keep up without compromising quality."

Trust in AI-generated results

90% of game developers trust AI-generated results in QA to some degree, while 10% of developers do not.



Expert Insight: Henry Golding

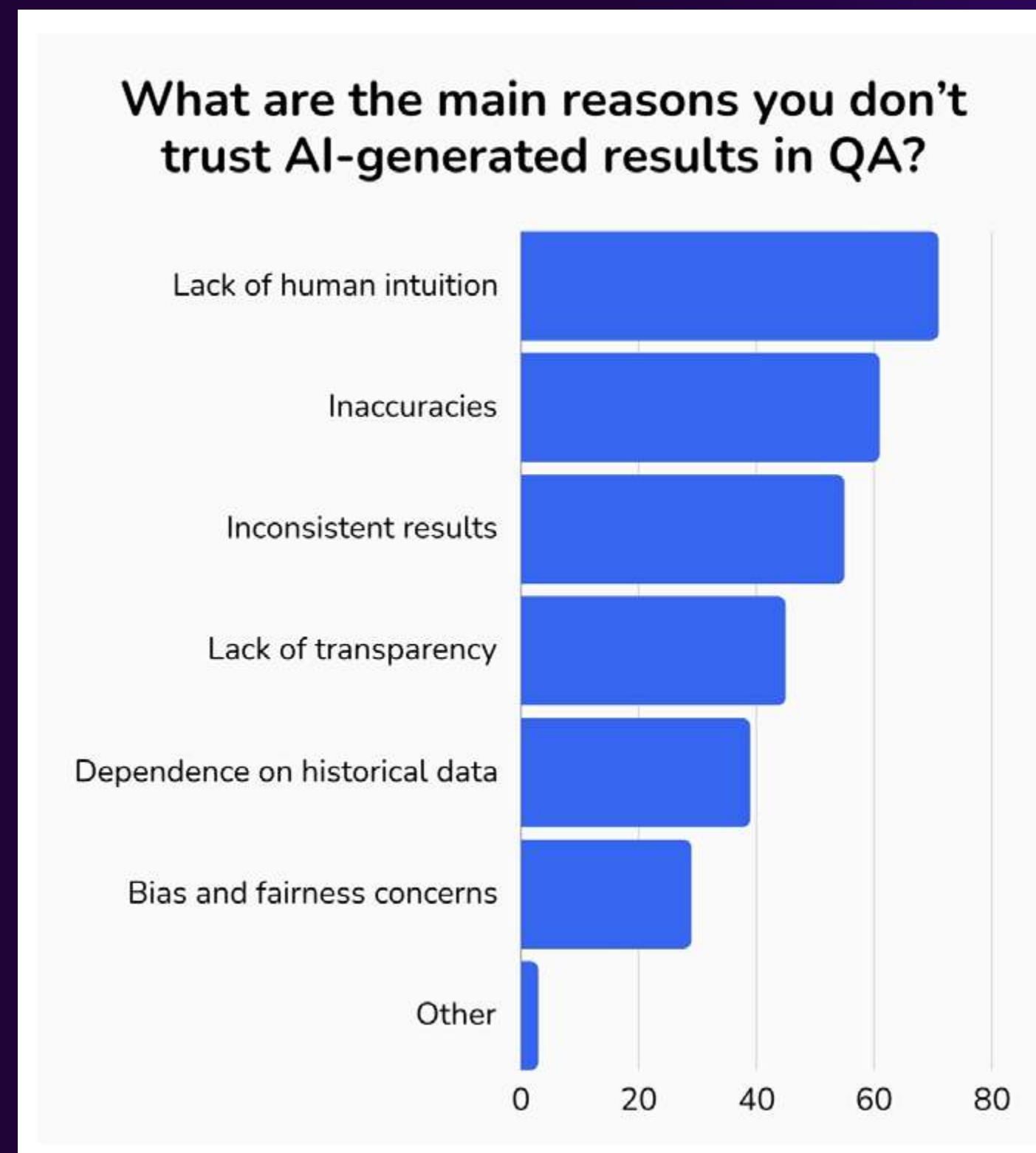
"I see many promising applications for AI, if we as an industry are willing to do the hard work of restructuring our development practices for humane and sustainable development. The nightmare scenario in my opinion is just leaving things how they are and then layering AI on top."

"If you're looking to AI to just automate traditional QA tasks without fixing the underlying process, you're missing the point. When used thoughtfully, AI can free up teams to focus on what really matters — delivering better games."

Reasons for skepticism

Of all the possible use cases for AI in QA other than bug detection, the top three according to developers, were:

1. Lack of human intuition
2. Potential for inaccuracies
3. Inconsistent results

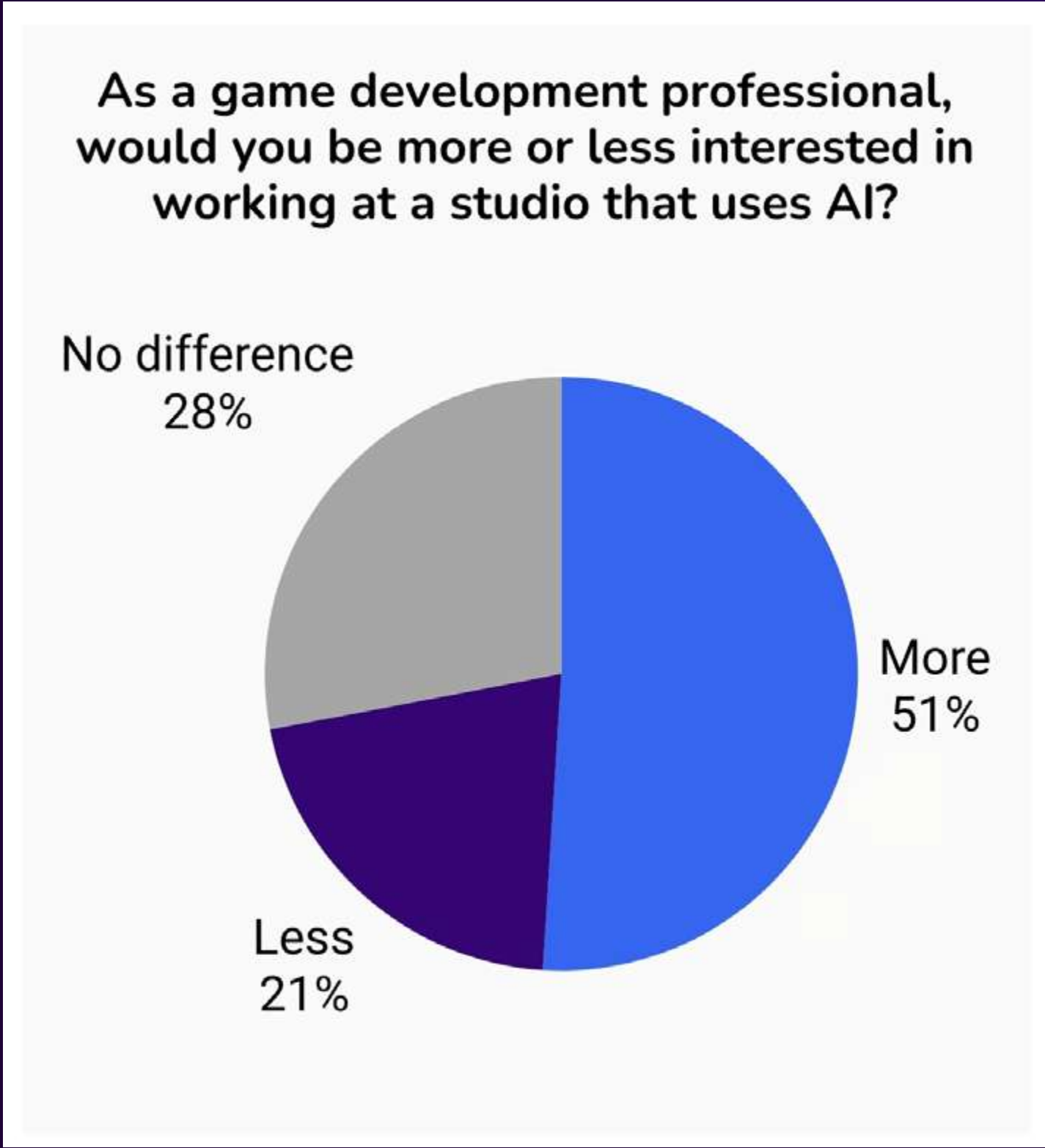


Expert Insight: Rob Sandberg

"You need people playing your game, but there's a flip side to that. Sometimes, QA knows how to break a game too well. They know how to hunt for and find bugs but aren't playing like real players. If you can get your automation to play like a player, you'll find new bugs to fix. Catching the issues real players will encounter early is huge because hotfixes are the scourge of live service games."

Interest in AI-enabled studios

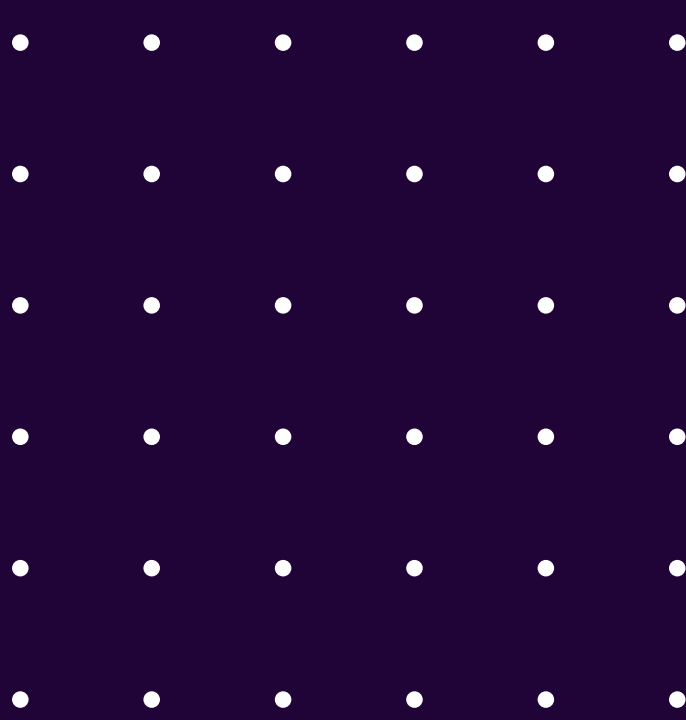
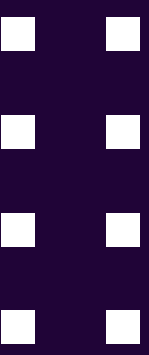
51% of game developers would be more interested in working at a studio if it used AI for QA, highlighting AI's growing appeal in the job market.



Expert Insight: Ben Wibberley

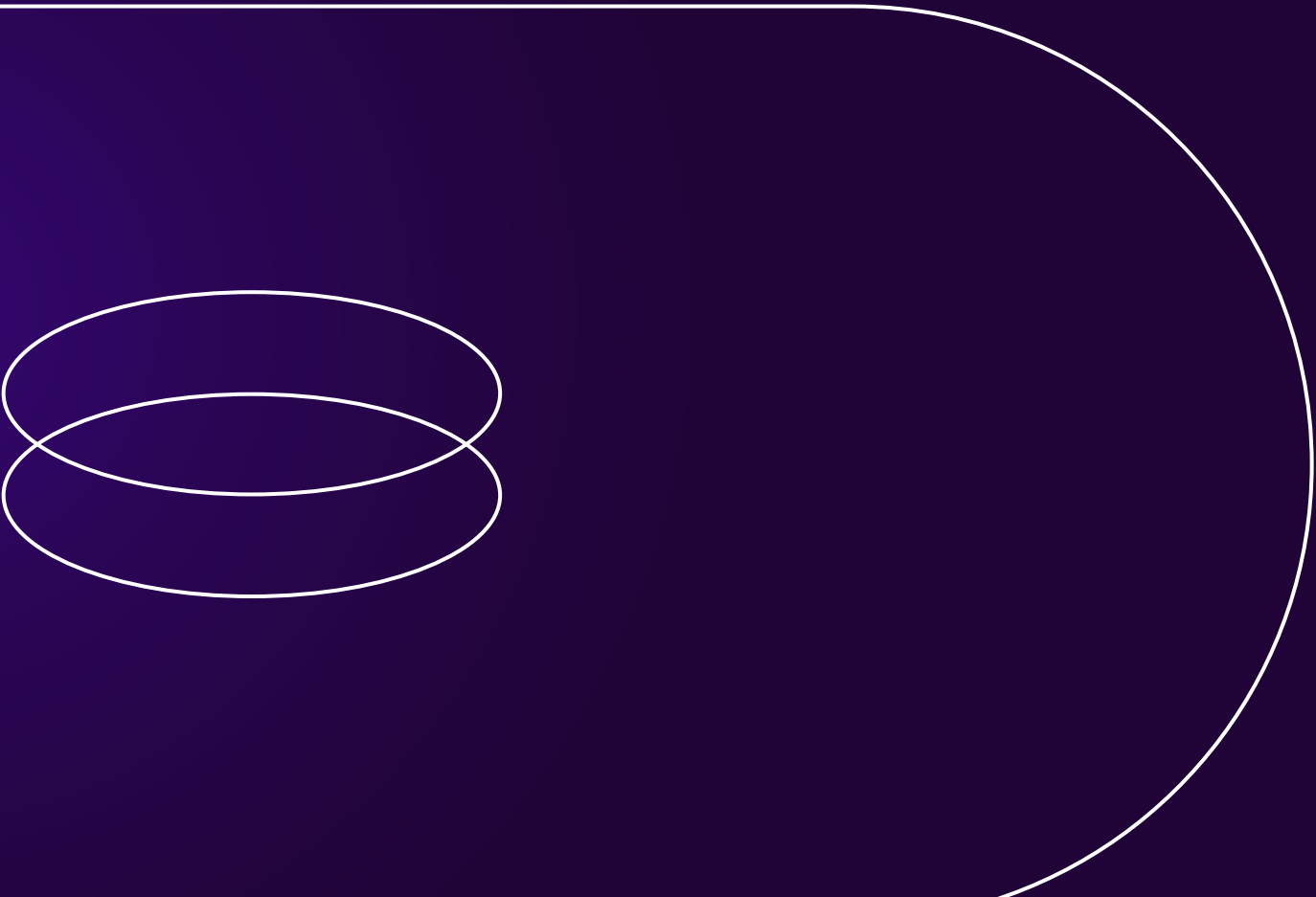
"AI removes the repetitive, mundane aspects of QA, like collision detection or endlessly testing the same functionality. It enables testers to focus on meaningful, higher-value work – like exploring creative challenges, testing gameplay mechanics, or addressing more complex issues. Done right, it can make their jobs more enjoyable and open up opportunities for career growth, such as transitioning to more technical or strategic roles."

Challenges to AI implementation



Despite the potential, developers identified key challenges to AI adoption, including:

- 1. Setup complexity
- 2. High cost
- 3. Resistance to change within teams



What are the main challenges you face when integrating AI into QA workflows?

Answer	Mean ranking
AI setup complexity	3.25
High costs	3.37
Resistance to change	3.4
Lack of skilled staff	3.47
Immature tools	3.67
Unreliable results	3.84



Expert Insight: Dajana Dimovska

“Like most devs, I look forward to the day when AI solutions are a lot more plug-and-play and don’t require a ton of set up time. When that’s the case, and there are bots that can replicate behavior in just about any genre, that would be a huge step forward in the industry.”

The modl.ai perspective

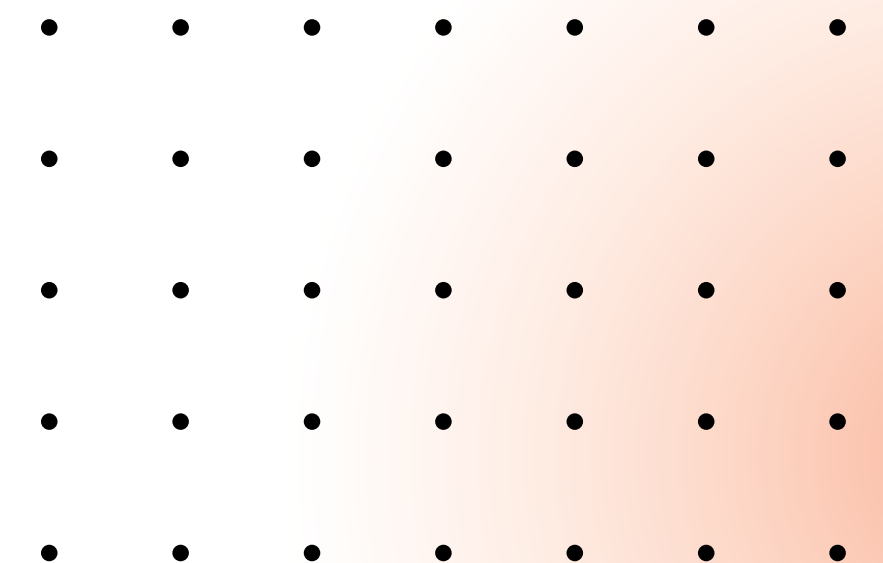
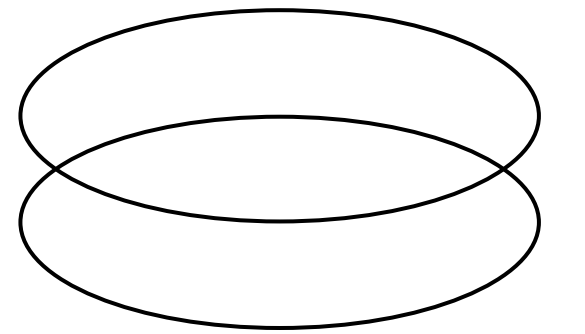


Benedikte Mikkelsen, CPO & Co-founder, modl.ai

“Our vision statement talks about empowering game developers with AI, which may seem lofty, but it’s true: many tasks within testing are repetitive and wasteful. We’re thinking of ways to allow for better use of human intelligence and providing QA teams with tech that helps them supersize the volume of content they cover.

We think that the majority of developers are realizing that AI tools will be an integral part of development in the future — working for a studio that uses such tools means that you are participating in forward-thinking activities in the industry and working at a studio with a greater chance of success.”

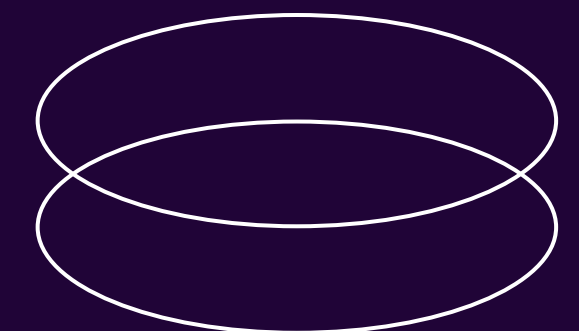
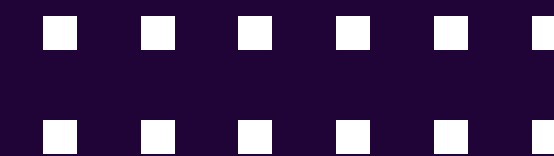
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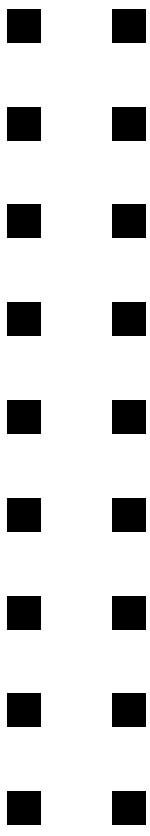


Conclusion

As games become more complex and development cycles become increasingly compressed, studios that embrace AI-driven QA tools will gain a significant competitive edge. By leveraging these technologies, they will be better equipped to deliver stable, high-quality releases while meeting the demands of a fast-paced industry.

While AI offers transformative efficiency in bug detection and testing, studios must maintain a thoughtful balance between automation and human expertise. By combining AI's precision and scalability with the creativity and insight of experienced QA professionals, studios can ensure that innovation and quality remain at the heart of their development processes.





About modl.ai

modl.ai is at the forefront of revolutionizing game development through cutting-edge AI technology. We provide AI-powered solutions designed to enhance game testing, player behavior modeling, and game development processes. Our proprietary AI systems empower game developers to create smarter, more engaging, and bug-free games by automating testing, optimizing player experiences, and improving game stability.

With a passion for innovation and a deep understanding of both gaming and artificial intelligence, modl.ai is committed to transforming how games are developed and experienced across the globe.

Learn more at modl.ai

