The 2025 AWS guide to generative AI for game developers

Ship better games faster, revolutionize player experiences, and optimize publishing operations with generative AI

This eBook is for game-industry decision makers interested in learning how generative AI can accelerate and optimize the development of innovative new games.

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Explore the game-changing possibilities of generative AI

From faster game development to more engaging player experiences and streamlined publishing, generative artificial intelligence (gen AI) is transforming the games industry today—and igniting a new era of innovation. Game developers who leverage gen AI today can better meet players' needs and desires down the line, but they must develop the right strategy and invest in the right tools to best integrate AI into their culture and workflows.

The following pages identify practical gen AI capabilities, explore the technology's value for game studios across three key application areas, offer thought starters for role-relevant use cases, and much more.

The unique expertise and experience of AWS

With **more than 15 years' experience** supporting game developers, such as Sony Interactive Entertainment, Epic Games, Gearbox Software, Riot Games, Behaviour Interactive, Warner Bros. Games, and Ubisoft, Amazon Web Service (AWS) understands how to address the unique challenges and demands of the games industry.

Our expertise in AI spans over two decades, from groundbreaking experiments in the early days of Amazon retail to **democratizing gen AI** today. AWS has helped **more than 100,000 businesses** of all sizes and industries—including many game studios—leverage AI to improve their products, operations, and customer experiences.

AWS understands how to address the unique challenges and demands of the games industry.

Glossary of artificial intelligence terms

Artificial intelligence (AI)

The field of computer science that is dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, creation, and image recognition. Modern organizations collect large volumes of data from diverse sources like smart sensors, human-generated content, monitoring tools, and system logs. The goal of AI is to create self-learning systems that derive meaning from data. AI can then apply that knowledge to solve new problems in human-like ways. For example, AI technology can respond meaningfully to human conversations, create original images and text, and make decisions based on real-time data inputs. Organizations can integrate AI capabilities into their applications to optimize business processes, improve customer experiences, and accelerate innovation.

Machine learning (ML)

The science of developing algorithms and statistical models that computer systems use to perform tasks based on patterns and inference rather than explicit instructions. ML is a subset of AI and the foundation of gen AI.

Generative AI

A type of AI that can create new content and ideas, including conversations, stories, images, videos, and music. It is powered by large models that are pretrained on vast amounts of data, commonly referred to as foundation models (FMs).

Foundation model

An ML model that is trained on a broad spectrum of content, capable of performing a wide variety of tasks—such as understanding language, generating text and images, and conversing in natural language—and serves as a foundation for specialized gen AI applications.

Large language model (LLM)

An ML model that is trained on a large corpus of text to recognize, translate, predict, and generate new text. Some LLM examples include BERT, GPT, PaLM, BLOOM, Llama, Chinchilla, Claude, Command, Jurassic, and **Amazon Nova**.

Hallucination

A response generated by AI that contains false, misleading, or nonsensical information. Sometimes called "model hallucination," the behavior is caused by AI's limited contextual understanding of human language and can be exacerbated by poor-quality training data.

Put generative AI to work for common game development tasks

Before game studios can unlock the value of gen AI, it's important that they develop a fundamental understanding of how the technology works, what it can do, and how it's being used in the games industry today. This section provides an overview of these topics to use as a starting point and reference in the fast-evolving field of gen AI.

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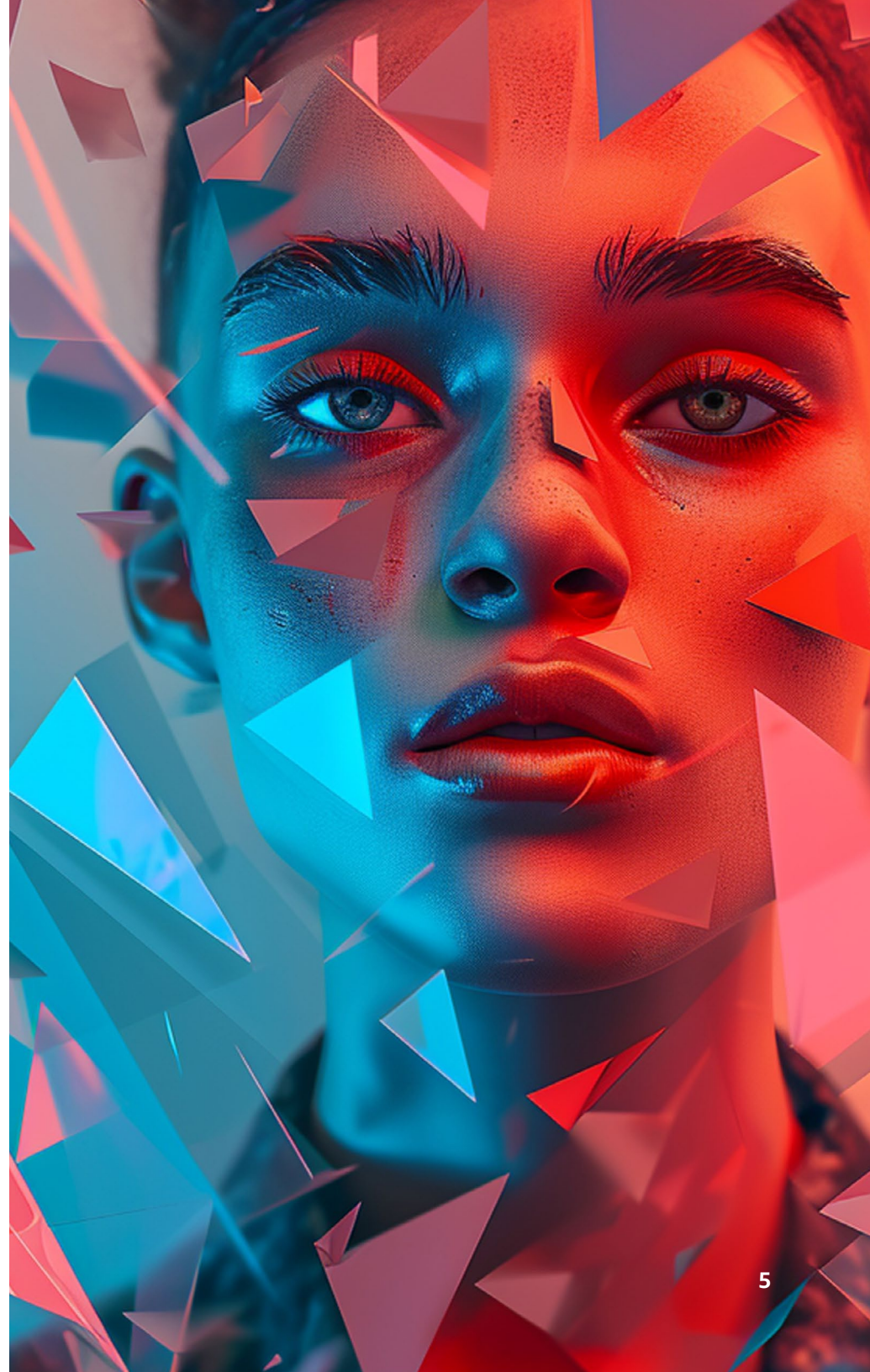
Capabilities

Image generation: Create concept art, game assets, and landscapes; render fully textured game images and video; generate marketing assets like personalized game trailers.

Audio generation: Produce music, sound effects, and character voice-overs; **orchestrate background instruments** when given an input melody.

Dialogue generation: Create background dialogue for non-player characters (NPCs); personalize expressions, dialogue, and narratives to player preference.

Text generation: Draft descriptions for in-game experiences, specific narratives, or the game itself; leverage language-guided editing for game workflows; generate or refresh marketing and sales collateral; personalize gameplay based on players' unique paths.

Common tasks
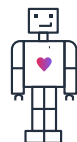
Automated customer support: Streamline customer self-service processes and reduce operational costs by deploying AI-powered chatbots and virtual assistants.

Agent-assist and conversational analytics: Improve agent performance and reduce resolution times by equipping customer service teams with AI-powered knowledge search, call summarization, and post-call analytics.

Personalization: Deliver new and deeper gaming experiences that are unique to individual players; increase customer engagement with curated messages and offers.

Code generation: Accelerate application development with **AI-generated code suggestions** based on developer comments and existing code.

Conversational search: Improve employee productivity with conversational interfaces that use AI to summarize complex content, locate accurate information, and respond to user queries at lightning speed.

How Saltwater Games leverages generative AI to develop voice-based gaming experiences

Saltwater Games crafts exceptional entertainment experiences, igniting its audiences' imaginations with artistic excellence and cutting-edge technological innovations.

The game studio turned to AWS to build the gen AI architecture of the world of *Resurgence*, an upcoming free-to-play postapocalyptic open-world crafting and survival game. The in-game ThorAI, powered by **Amazon Bedrock**, has fully voiced, interactive in-game NPCs in the companion mobile game *Missing*. Saltwater Games also leverages **gen AI services and solutions** from AWS for several real-world use cases.

Learn more ›

The 3 application areas for generative AI in games

To help studios start or expand their journeys, we have classified gen AI for game development use cases into three application areas. Read on to explore each area in detail—or use the links below to jump to a specific area.

+1

+2   +3

APPLICATION AREA #1:

Accelerating game development

Gen AI can accelerate ideation, communication, prototyping, and development of game concepts and assets. Development teams can explore more options when assisted by gen AI.

Read more ›

APPLICATION AREA #2:

Innovating new player experiences

Gen AI can create an infinite variety of characters, items, and world elements that are unique to each player—and allow players to interact with them in new, open-ended ways. It empowers creators to craft their own experiences without technical barriers. And AI-powered assistants can help new players get up to speed quickly, reducing frustration and rage quits.

Read more ›

APPLICATION AREA #3:

Optimizing publishing operations

Marketing and social media teams can use gen AI to spin up new content in seconds, personalize and refresh collateral, and explore new ideas. With conversational search and media summarization tools powered by gen AI, customer support and other departments can find needed information in a snap and rapidly grow their understanding of complex topics.

Read more ›

Ship better games faster

Key functionalities

- Generate concept art, game assets, characters, avatars, dialogue, narratives, and voice-overs

- Assist with coding, game prototyping, and incorporating player feedback

Gen AI is emerging as a critical tool for game creators looking to release higher-quality games faster and more efficiently. The technology can boost productivity and accelerate results by automating or simplifying a variety of tasks and eliminating time-consuming or repetitive work. This allows game creators to focus more on what they love: shipping fun, innovative games that delight players and keep them coming back for more.

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Remove toil, experiment more

Gen AI can be particularly beneficial in the initial phases of game development. Creators can use the technology to generate temporary content, including characters, items, scenery, animation, music, and voice-overs. With the ability to generate and swap out elements quickly, creators can also explore a broader range of options for the game's mood and feel before deciding on a final direction.

Replacing the drab, gray placeholder boxes typical of early demos with representative AI-generated content can help testers and developers better understand the game's vision and focus on the most valuable improvements. It can allow the game team to share its full vision earlier and with greater ease, improving pitches to investors and publishers and potentially even increasing media buzz and fan anticipation.

Code assistants powered by gen AI can further accelerate development by automatically providing code suggestions, creating unit tests, and optimizing and debugging game code. Tools that can be trained on existing code and developer comments are particularly helpful, as they can provide highly relevant and accurate suggestions. These tools can also drive faster backend development, saving even more time.

Scale rapidly to new markets

Game localization is an area of development in which gen AI yields value by opening up games to new audiences—as today's LLMs can be used to localize existing documents or text. Studios can leverage this capability to accelerate the translation and localization of customer support or game reference guides for various languages and markets.

The next frontier is to use gen AI to create synthetic voice-overs of the game script that are automatically translated and localized for specific markets. This can shorten development cycles while helping game studios address critical talent gaps for certain languages.

Drive efficiency and teamwork

Gen AI can also be used to streamline game development workflows and improve collaboration. To illustrate this, consider the process of creating in-game music. Studios can use gen AI to draft clear descriptions of desired sounds and improve the quality of feedback provided to composers. Studios can also equip composers with AI-generated example music—which may communicate a creative vision more effectively than text alone.

By applying these same principles to other game development processes that require collaboration, studios can begin to see the potential of gen AI to improve teamwork and streamline communication across a myriad of game development areas.

How NCSOFT accelerated the uptake of generative AI with AWS

NCSOFT is a leading South Korean game developer operating many of the most successful and influential multiplayer games in the industry, with hundreds of millions of players participating daily.

NCSOFT aimed to accelerate the uptake of gen AI by launching its LLM, VARCO ("Via AI, Realize your Creativity and Originality"), on **Amazon SageMaker JumpStart**, which provides pretrained open-source models. The LLM helped businesses build gen AI applications to create new content across a broad range of industries and made it easier for South Korean organizations to build specialized applications using their native language. To get customers started with gen AI, NCSOFT launched seven LLMs on SageMaker JumpStart.

**Explore how NCSOFT launched LLMs on AWS ›**

Revolutionize the player experience

Key functionalities

- Power new in-game features, lifelike NPCs and dungeon and game masters, personalized experiences, and player assistants and coaches

- Generate an infinite variety of NPCs, levels, and dungeons

- Create non-player dialogue and leverage chatbots to provide on-demand training and tips to new players

As game developers continue to adopt and experiment with gen AI, they are discovering the technology's potential to reinvent the player experience. Gen AI can offer gameplay that adjusts to individual preferences in real time, creates an infinite variety of new characters, level designs, and missions, powers lifelike interactions with dynamic NPCs and virtual assistants, and much more.
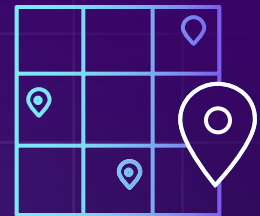
Adapt to players in real time

Studios can use gen AI to dynamically adjust gameplay based on players' choices, preferences, and feedback. This can allow for truly personalized experiences that feature quests, levels, and other game mechanics uniquely tailored to each player.

Gen AI can also allow players to enjoy realistic interactions with NPCs. This can be achieved with models that analyze existing game assets to generate new dialogue, voice-overs, and animation based on player input. Imagine entire worlds populated by lifelike NPCs that players can talk to, team up with, fight, or build relationships with in seemingly endless ways.

Developers can even use gen AI to help ensure an optimal balance of challenge and fun. Gen AI can be used not only to scale game difficulty in response to individual player success—but also to continuously adjust virtually any aspect of the game in response to player feedback and data.

Redefine replay value

Gen AI can keep players coming back for more by creating an infinite variety of new experiences. For example, developers can use models to auto-generate certain game areas or entire levels based on set parameters. Gen AI can take this idea far beyond the rules-based systems of the past, offering players a truly unique experience every time they play.

Developers can also use gen AI to create new game content quickly or even automatically. This can help keep players invested through new missions or daily challenges while minimizing the burden on developers. Gen AI models can even create items and reskin levels to match new themes, allowing for games that continuously expand and offer new content with speed and variety far exceeding the industry norm.

Engage every type of gamer

Studios can use gen AI to help and encourage new players, endlessly challenge veterans, and engage gamers of every kind.

With virtual assistants and chatbots powered by gen AI, new players gain a lifelike ally that guides them through the early stages and helps them gradually advance their skills. For veteran gamers, these features can act as resource centers where players study advanced techniques or dive deeper into the game's lore—all through a simple Q&A interface.

Studios can also use gen AI to bring more real-world experiences into their games. For example, gen AI can help replicate the excitement and simplify the logistics of tabletop role-playing games (RPGs). A lifelike AI-powered game master oversees and dynamically adapts the game's rules, storylines, and NPC interactions—delivering the adventure RPG fans crave while making the game more accessible to newcomers.

Gen AI can even be used to power advanced tools for user-generated content (UGC), which can help attract streamers, content creators, and influencers. Players can use these tools to share their experiences faster and with greater ease. Gen AI can also help remove technical knowledge barriers—such as coding, design, and animation—allowing a wider range of creators to develop new game content or mods.

Create NPC dialogue

Developers can leverage the power of gen AI to create more interesting, engaging, playful, and human-like NPC conversations and dialogue directly in the game. Powered by gen AI, a player can experience custom dialogue and interactions with NPCs based on their actions.

Simplify new-player participation

Gen AI can enable the seamless onboarding of new players using AI-powered chatbots that provide training, tips, and resources on demand.
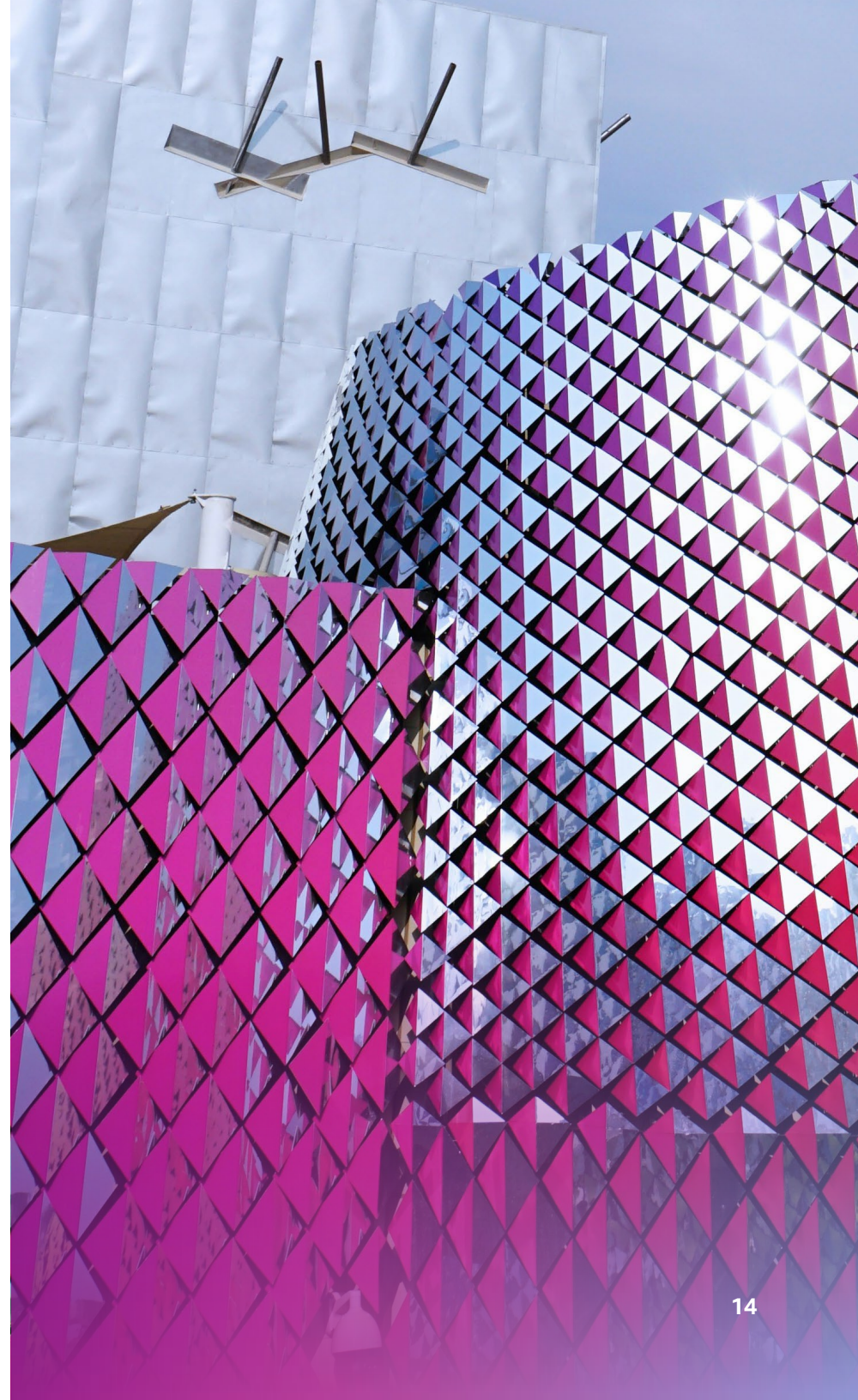
How MOONTON improves accuracy by 90% with AWS

MOONTON is an international mobile gaming company that creates thrilling gaming experiences for its global players, pioneers MOBA (multiplayer online battle arena) gaming, and has dedicated departments that are leading efforts in esports and game publishing.

Mobile Legends: Bang Bang is MOONTON'S award-winning MOBA game. With over 1.465 billion installations and a monthly active user base of over 110 million players, it has become one of the top 10 most-played games in over 80 countries.

For this blockbuster game, MOONTON used **Claude Instant** from Anthropic, an AWS Partner. The Claude Instant LLM is powered by Amazon Bedrock and prompt engineering services. The service has enabled a substantial improvement in response speed and accuracy in insult detection, with the accuracy of insult detection reaching more than 90 percent. MOONTON also interfaced the Claude LLM family with Amazon Bedrock to optimize the public opinion analysis process to ensure more accurate output results, which provides valuable information for subsequent game product development.

How Scenario produces 100,000 images daily using generative AI on AWS

Scenario was founded to revolutionize in-game and marketing asset production. The company set out to empower developers and artists with easy-to-use gen AI tools that could create these assets at warp speed.

Scenario knew it needed to move fast to meet industry demand for its offering. To get up and running quickly, Scenario went all in on AWS—building its gen AI offering using **Amazon Elastic Container Service** (Amazon ECS), a fully managed container orchestration service, and **AWS Cloud Development Kit** (AWS CDK) to accelerate cloud development.

With its API-first offering, Scenario's studios can now generate hundreds of usable characters, props, and landscapes from team workspaces or directly within its games in only minutes.

Responding to game developers' needs, Scenario achieved far improved consistency of generated assets, removing rework and unpredictability for its customers. This higher standard of quality achieved on AWS has made Scenario appealing in industries outside of games, such as media and advertising.

Read the full success story ›

2 MONTHS
to build its gen AI offering

MILLIONS
of images provided with only 3 engineers on staff

40 COUNTRIES
scaled to in 3 months

AWS services used

AWS Batch

Efficiently run hundreds of thousands of batch and ML computing jobs while optimizing compute resources.

Learn more ›

Amazon API Gateway

Allow developers to easily create, publish, maintain, monitor, and secure APIs at any scale.

Learn more ›

AWS CDK

Accelerate cloud development using common programming languages to model applications.

Learn more ›

Amazon ECS

Simplify deployment, management, and scaling of containerized applications.

Learn more ›

Upgrade game publishing and support

Key functionalities

- Generate marketing and sales collateral, additional campaign content, and ideas for reaching new audiences
- Power community and customer-service bots and enterprise-knowledge bots

Beyond game design and development, gen AI can help optimize publishing operations to promote a studio's games, expand its audience, and provide players with a high level of support.

Accelerate ad and social campaign creation

Advertising and social campaigns often create players' first impressions of a game. Gen AI can accelerate campaign production, exponentially widen testing capabilities, and allow for highly personalized copy and imagery that engage a wide variety of audiences. Further, using a gen AI model fine-tuned to the game's visual style and substance can help marketers and artists be far more productive—and allow them to develop award-winning campaigns faster and with greater consistency.

Improve support and player self-service

Gen AI can help game developers improve the efficiency and quality of global customer care and support. Chatbots, text and voice summarization, intelligent resolution recommendations, and language translation can help support teams do their jobs more effectively—and get players back in the game faster.

For example, the Electronic Arts (EA) Worldwide Customer Experience (WWCE) organization is reimagining the player support experience with gen AI. Through Amazon Bedrock—a service that offers access to high-performing FMs through a single API—the team is experimenting with **Amazon Foundation Models** to solve for various customer service use cases. These include automated Q&A, engagement summarization, service ticket assist, and chatbots.

How Electronic Arts leverages generative AI to create copy for blog posts and webpages

Electronic Arts (EA) is a global leader in digital interactive entertainment, developing and delivering games, content, and online services for internet-connected consoles, mobile devices, and personal computers.

EA leverages the services of Amazon Foundation Models for test-case creation and customer service use cases. Amazon Foundation Models are pretrained on large datasets, making them powerful general-purpose models to use privately or to be customized with your own data. EA leverages the services of Amazon Titan Text to create copy for blog posts and webpages, classify articles into categories, open-ended Q&A, and information extraction.

Watch the video to discover how EA leverages Amazon Titan for language tasks ›

Create the right generative AI strategy

While the three application areas we've reviewed are generally good places to start, the value of gen AI across these and other use cases will differ among developers. Factors such as budget, resources, player preferences, and a studio's unique culture and goals should all be considered in determining how and where to deploy gen AI.

Through our experience helping game studios successfully adopt gen AI, AWS has observed and developed some strategic best practices. These include:

- Start by identifying key goals, then work backwards to determine how they can be reached and what milestones will need to be achieved along the way
- Treat gen AI as a tool that augments existing culture, processes, tools, and people rather than replacing them
- Commit to fine-tuning and customizing models to suit the style, quality, and lore of individual games and the studio itself

Speaking broadly, the desired end state of the gen AI journey should see multiple intelligent services working in concert to complement multiple teams' capabilities. The goal is to leverage gen AI throughout the development, production, and publishing workflows in ways that accelerate and improve business outcomes.
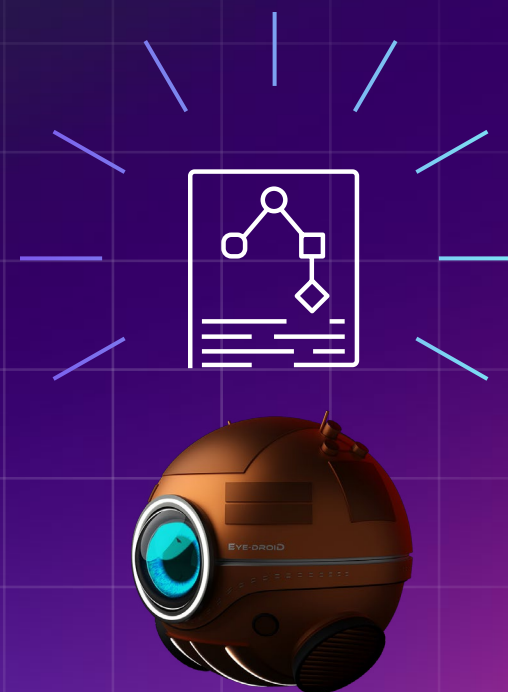
Identify ideal use cases

Determining the right gen AI use cases is critical to harnessing the full benefits of the technology. The following list of real-world use cases can help kick-start strategic and creative thinking when exploring and experimenting with gen AI.

## Accelerate game development with code suggestions

- **Code suggestions with Amazon Q:** Accelerate feature and backend service development, catch security gaps, and reduce bug count using highly relevant and accurate code suggestions provided by an AI assistant tuned to the studio's codebase. Amazon Q is trained on billions of lines of code and can generate code suggestions ranging from snippets to full functions in real time based on your comments and existing code. Bypass time-consuming coding tasks and accelerate building with unfamiliar APIs.

- **Bug detection:** Analyze code to detect possible bugs or inefficiencies and offer potential fixes.

Customer success: Fungies.io empowers developers with gen AI tools, including **Amazon Q Developer**, to successfully foster heightened code quality and achieve faster project delivery.

> **"We offer our developers an enticing alternative within the generative AI domain, focused on code enhancement and accelerated workload production for our dynamic platform."**
>
> Duke Vu, CEO & Founder, Fungies.io
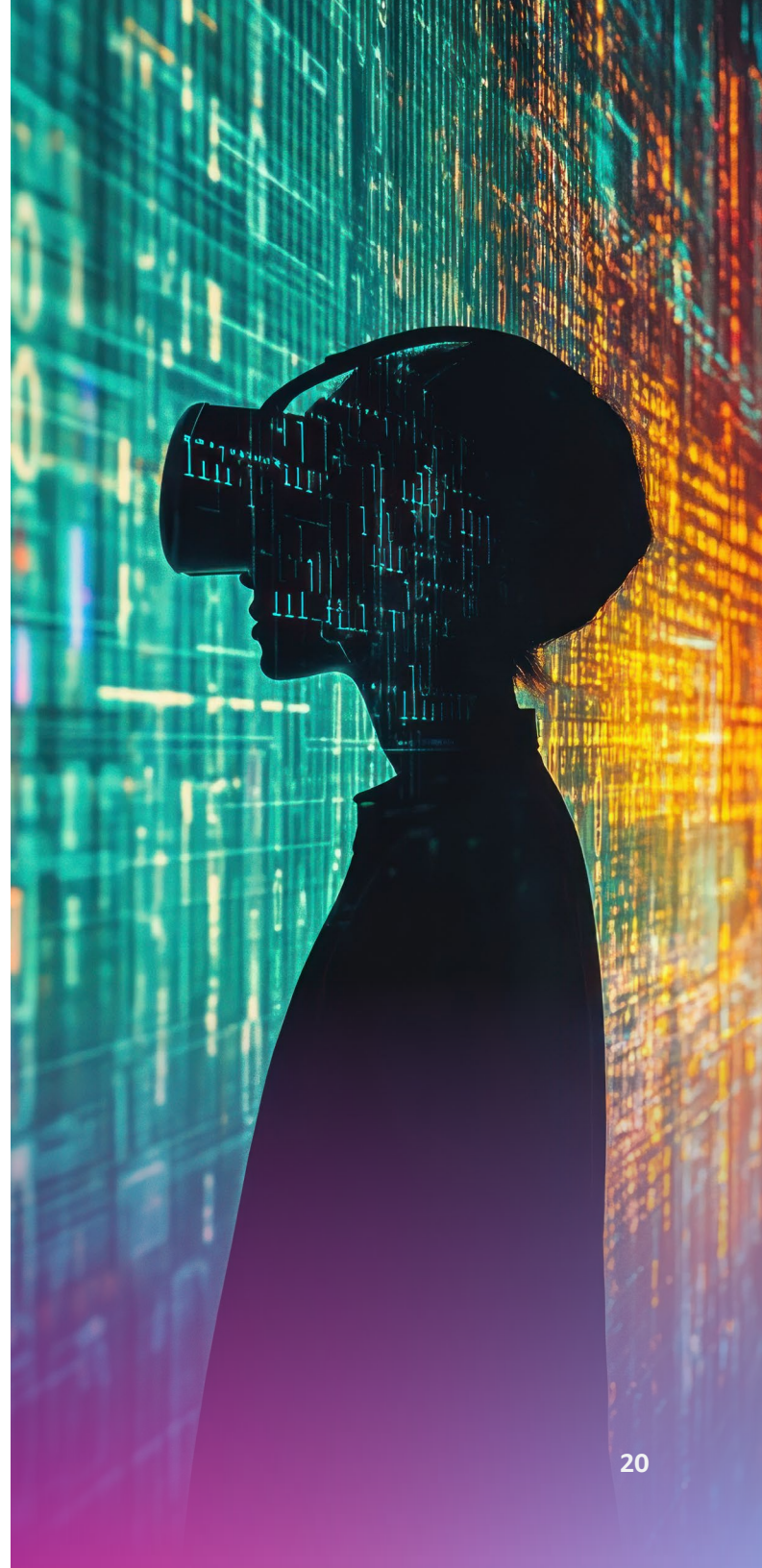
## Provide inspiration for game narrative writers

- **Idea generation:** Generate suggested plot points, character arcs, and dialogue based on input criteria.

- **Interactive storytelling:** Enable rich context-aware character interactions distinct from narrative creation with gen AI and allow the crafting of backstories and real-time dialogue that logically adapts to player choices. As characters respond intelligently to inquiries, interactive storytelling fosters personalized, immersive experiences and elevates interactive storytelling beyond static narratives.

Customer success: HopGame/Chengdu leverages gen AI on AWS to accelerate game development, enable model training and fine-tuning, and complete inference tasks.

> **"Whether it is the design of characters, props or scenes, generative AI on the cloud allows us to quickly obtain the materials we need and does not require us to operate and maintain AI-related infrastructure ourselves."**
>
> Wang Yu, CEO, iFUN.COM GCR
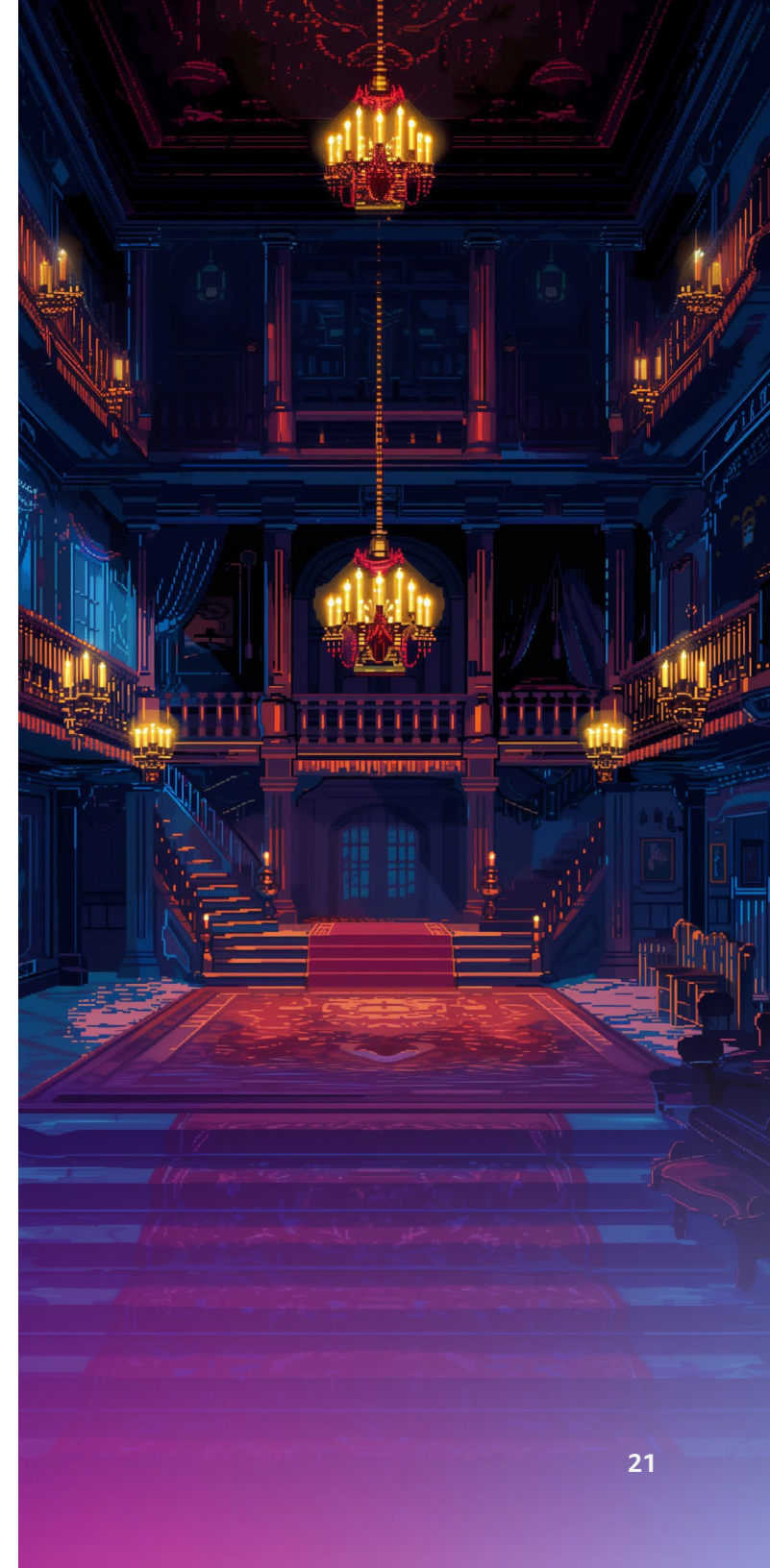
Accelerate creative experimentation and prototyping

- **Content creation:** Leverage gen AI to create concept art, sample game assets, and music to accelerate the world-building process.
- **Animation:** Generate base animation sets quickly and adapt them to each character's style to streamline the animation workflow for immersive game worlds.

Customer success: <u>Scenario</u> uses the power of gen AI to generate hundreds of usable characters, props, and landscapes for its games in minutes instead of weeks.

> **"Our company has served and generated millions of images with only three people, proving a new use case for generative AI with little time and effort."**
>
> Hervé Nivon, Co-Founder & CTO, Scenario

Create custom in-game experiences

- **NPC dialogue:** Create more interesting, engaging, playful, and human-like NPC conversations and dialogue directly in the game. Using gen AI, a player can experience custom dialogue and interactions with NPCs based on their actions in the game. **AWS for Games** offers guidance on creating **dynamic NPC dialogue on AWS**.
- **In-game chatbots/game coaches:** Onboard new players seamlessly with AI-powered chatbots to provide training, tips, and resources on demand.

Customer success: Captain Up leverages gen AI capabilities on AWS to create custom designs, personal challenges, and segmented rewards, enhancing the customer experience and deepening connections.

> **"Captain Up strategically employs Amazon ECS to scale its generative AI capabilities, creating custom designs, personal challenges, segmented rewards, missions, and tournaments to enhance the experience and deepen connections."**
>
> Uri Admon, Founder & CEO, Captain Up

Accelerate game advertising and social campaign creation

- **Content generation:** Generate marketing and sales collateral effortlessly to align it with existing campaigns or strategies and leverage the same look and feel as the game. Automate the creation of assets for different stores and social platforms.

- **New approach development:** Collaborate with gen AI to ideate fresh campaigns, content topics, and sales tactics.

- **Rapid market expansion:** Leverage gen AI to create content for specific audiences and efficient game localization to scale new markets faster.
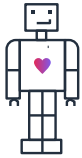
Customer success: Playstream/Tel Aviv leverages the power of AWS gen AI to create fast-paced, super-accurate content for players.

> **"Unlocking the power of AWS's generative AI tools and services helps us innovate and grow our products in the content creation and gaming industry."**
>
> Gadi Berqowitz, CTO, Playstream/Tel Aviv

Improve support and player self-service

- **Support efficiency and achieve text summarization:** Enhance global customer care and self-service using chatbots, resolution recommendations, and translation, and leverage AI-driven summarization to help understand complex information faster.

- **Chatbot/player self-service:** Empower players with intelligent chatbots for swift problem diagnosis and resolution, enhancing support efficiency.

- **Resolution recommendations and feedback analysis:** Equip support staff with intelligent tools to guide them to the most effective resolutions for players' game issues. Gain valuable insight by summarizing and categorizing large volumes of player feedback using gen AI.

Customer success: Game-industry leader EA uses Amazon Foundation Models—powerful, general-purpose FMs pretrained on large datasets. **Watch the on-demand webinar** to learn how to use Amazon Titan Text to generate copy for blog posts and webpages, classify articles into categories, and create open-ended Q&A and information.

Transform the future of gaming with generative AI on AWS

AWS can help game studios unleash the power of gen AI today. With gen AI on AWS, studios can:

1. Easily build and scale gen AI applications

Access and customize a powerful range of FMs with Amazon Bedrock, a scalable, reliable, and secure AWS managed service. Amazon Bedrock includes advanced **privacy and security** features that help protect intellectual property (IP) and sensitive information—so developers can **integrate their own data with confidence**.

2. Control costs while maximizing performance

AWS delivers the **most price-performant infrastructure for ML**. Over the last five years, we have invested in our own silicon to push the envelope on cost-efficiency and performance for demanding ML workloads.

3. Moderate player prompts and outputs

AWS offers built-in solutions that can help prevent players from contorting gen AI applications into producing content that violates community standards or legal regulations. Amazon Bedrock includes a moderation layer that flags objectionable prompts and outputs. Developers can use AWS reference architectures to build custom protection and content moderation layers with **Amazon Rekognition**, **Amazon Transcribe**, **Amazon Comprehend**, and other services.

4. Spend more time innovating and differentiating

AWS services empower developers with greater capabilities and more time to build. In a productivity challenge conducted by Amazon, developers who used **Amazon Q Developer**—an AI coding companion that **generates code suggestions in real time**—were **27 percent more likely to successfully complete tasks** and did so **57 percent faster** on average than those who did not use Amazon Q Developer. Finally, with **Amazon QuickSight**, game teams can share ML-powered business insights to **speed up and improve decision making**.

## 5. Enjoy flexibility and scalability

Take gen AI solutions even further with Amazon SageMaker JumpStart, an ML hub where developers can **discover, explore, and deploy a broad range of FMs**. AWS is continuously adding more models so studios can continue enjoying a wide range of options for years to come.

6. Maintain privacy and security

When studios customize FMs with their own data on Amazon Bedrock, the service makes a separate copy of the base FM that is accessible only by that studio. Further, **the studio's data is not used** to train the original base models. Amazon Bedrock also encrypts data in transit and at rest, supports identity and access management (IAM), and is in scope for many common compliance standards.

7. Leverage cloud services purpose-built for game developers

AWS for Games offers purpose-built game development capabilities to **help studios build, run, and grow their games**. Explore solutions for cloud game development, game servers, game security, LiveOps, game analytics, gen AI, and ML. Plus, accelerate deployment support with over 290 game development partners.

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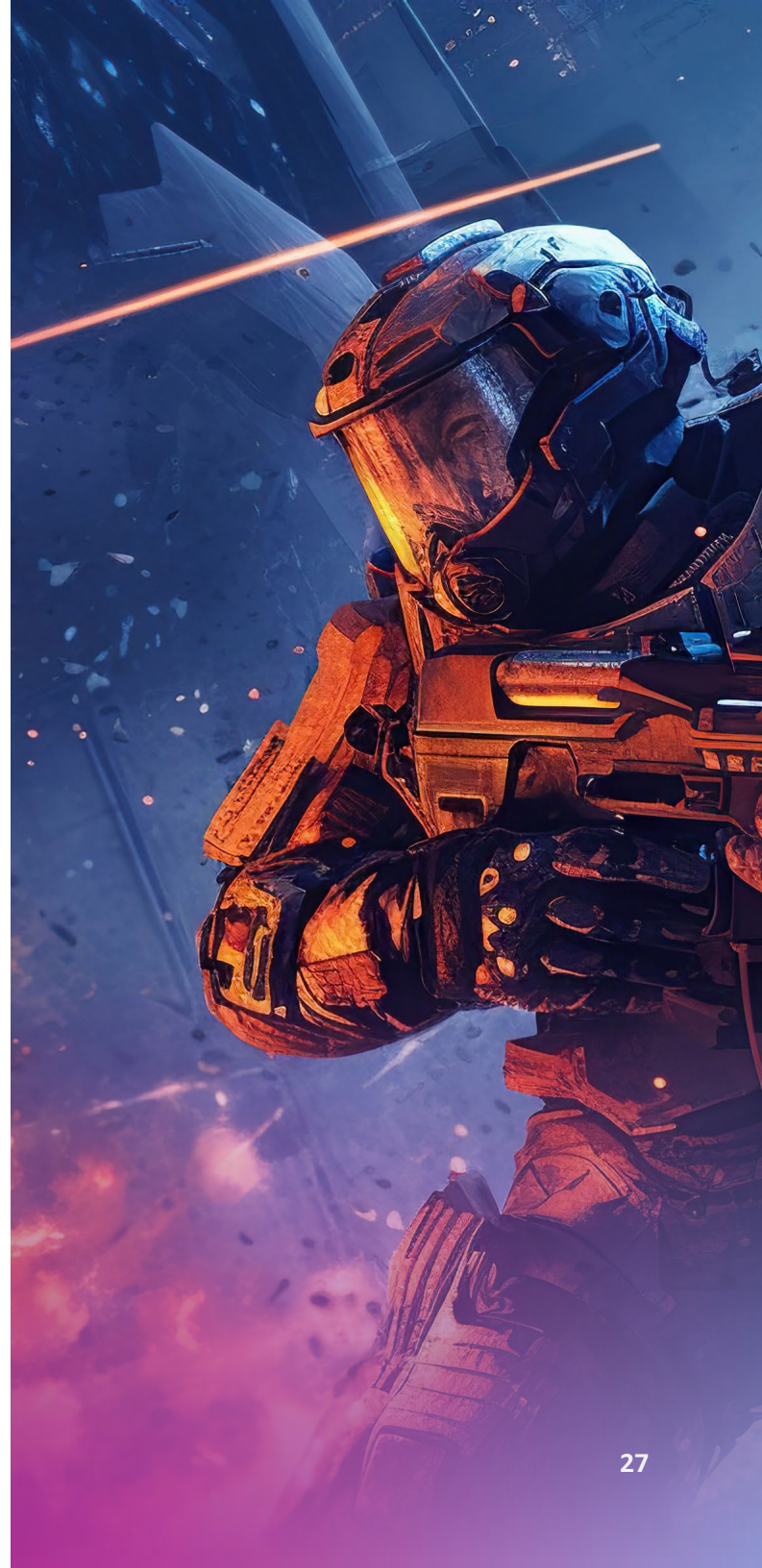
Addressing key questions with AWS

Studios are demonstrating the value of gen AI for games today—while also discovering the technology's enormous potential for tomorrow. As with any technology, however, harnessing the benefits of gen AI requires careful planning and strategies for overcoming key challenges.

Here are some questions to consider along the journey—and some ideas on how AWS can help address them:

How will IP be kept private?

AWS offers many **privacy and security** features that can help protect confidential and sensitive data as studios leverage gen AI. For example, Amazon Bedrock allows developers to **privately customize FMs** from a broad range of industry-leading providers with their studio's data. To help keep IP safe, the service makes a separate copy of the base FM that is accessible only by that studio, and the studio's data is not used to train the original base models. Further, Amazon Bedrock encrypts data in transit and at rest, supports IAM, and is in scope for many common compliance standards.

How will player-generated content be moderated?

AWS provides multiple services and solutions for efficiently moderating UGC across text, images, audio, and video. Amazon Bedrock offers **content moderation** capabilities today, and **Amazon Bedrock Guardrails detects and blocks user inputs and FM responses** that fall into restricted topics that our customers define. Developers can also use **Amazon Rekognition Content Moderation**, which can **efficiently review millions of images and videos** and **automatically flag up to 95 percent of content** that violates predefined or business-specific rules.

See **this guidance from the AWS Solutions Library** for additional ideas and information.

How will the cost of operating generative AI applications at scale be managed?

AWS can help studios maintain the right balance of performance and cost. For all types of workloads, **AWS Auto Scaling** monitors the customer's applications and automatically adjusts capacity to **maintain steady, predictable performance at the lowest possible cost**. For AI and gen AI workloads, **Amazon Elastic Compute Cloud** (Amazon EC2) instances featuring **AWS Trainium** accelerate model training time while **reducing training costs by up to 50 percent**. And Amazon EC2 instances with **AWS Inferentia** deliver **up to 2.3 times higher throughput** and **up to 70 percent lower cost** per inference.[1]

CONCLUSION

Next steps

Gen AI can help transform game studios, empowering them to disrupt the industry and build great games faster. With AI tools evolving at a rapid pace and new game-specific use cases emerging on a seemingly daily basis, the time for adoption is now.

By exploring gen AI today, game studios can shape their role within the industry. They can lead the way in satisfying players' hunger for new experiences with a new wave of innovative gameplay mechanics and features that set their games apart. And studios can deliver these differentiating capabilities at speeds and with degrees of variety unlike anything the industry has ever seen.

AWS can help game developers realize these benefits by executing the right gen AI strategy—one that combines the right tools and infrastructure to **accelerate game development, revolutionize player experiences, and expand the game's audience on a global scale.**

Further, AWS is invested in the long-term evolution and success of gen AI. In our experience **helping more than 100,000 organizations leverage AI**, we've developed five tips that can help studios achieve their gen AI goals today—and **stay on the leading edge of game innovation** for years to come.

Learn more about gen AI on AWS ›

Explore AWS for Games ›

Discover Dynamic Game Content Generation solutions on AWS ›

Questions? Get in touch with an AWS for Games expert ›

Tips for long-term success with generative AI

- **Integrate gen AI with existing tools and workflows.** The most successful adoptions are ones that augment—not replace—their operations with gen AI.

- **Foster a culture of innovation.** Encourage teams to try different FMs, experiment with new use cases, continuously fine-tune their models, and remain curious as they develop their gen AI skills.

- **Always prepare and cleanse data before training models.** Cleansing training data of errors—such as incomplete or inaccurate data fields, duplicate information, unrelated data, and incorrect formatting—can help ensure that gen AI models produce accurate predictions and results.

- **Stay future-ready.** Gen AI technologies are rapidly evolving, so be ready to migrate models as new ones become available.

- **Start small and scale successes.** Experiment with various use cases to find the right one for the game, the infrastructure, and your budget and resources. Once the value of a use case has been proven locally, leverage AWS to deploy and scale it around the globe.