



UNREAL
ENGINE

PUSHING THE BOUNDARIES OF POSSIBILITY IN MEDIA AND ENTERTAINMENT

A report on the future of real-time technology by
Epic Games and **Forrester Consulting**



Image courtesy of Eric Liu

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Time to get real:

The game-changing nature of real-time technology



Epic Games has come a long way since we launched Unreal Tournament in the late 1990s—and the pace of change has not slowed. Today, Unreal Engine is used by thousands of people around the world to develop cutting-edge visualizations, not just in gaming but for business applications, too.

“We are working with architects, manufacturers, media and entertainment companies, and designers to transform their businesses through real-time technology.

“The opportunity is huge, so we’ve partnered with leading global analyst Forrester to explore where things might be heading—and how real-time technology is already being used to fuel creativity and drive efficiency.”



Marc Petit,
General Manager, Unreal Engine Enterprise



Real-time technology for media and entertainment

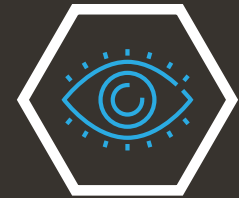
REAL-TIME ENGINES HAVE THE POTENTIAL TO REINVENT THE MEDIA AND ENTERTAINMENT INDUSTRY, BRINGING:



ABILITY TO REVIEW AND APPROVE IN REAL TIME



REAL-TIME SUPPORT FOR VIRTUAL PRODUCTION



VIRTUAL ENVIRONMENT SCOUTING



HIGH-QUALITY AUGMENTED REALITY SOLUTIONS



CENTRALIZED PRODUCTION HUB



FINAL-QUALITY BROADCAST PRODUCTION VALUES, READY TO AIR

A market view from Forrester Consulting¹

The pace of change continues to accelerate. Over the last few years, real-time rendering solutions have emerged as a vital component helping to overcome the complexity, sophistication, and demand of enterprise workloads.

Significant innovation in interactive graphics software has been fundamental to this change. These advances are bringing about a new age of visualization, where game engine technology is being used to produce photorealistic virtual experiences prior to execution of designs.

Today's designers and visualization specialists are moving away from slower, iterative, traditional offline methods of rendering in favor of adopting real-time workflows. The result has been a game changer for many industries, driving efficiency and boosting creative choices.

¹Taken from the Forrester Consulting study "Real-time rendering solutions: unlocking the power of now", commissioned by Epic Games

What is real-time rendering?

The ability to produce media such as animation, designs, or graphics instantly. That means making tweaks to a design and seeing the results immediately—without having to wait for rendering time.

59%

of decision makers say they are likely to adopt real-time technology within the next 12 months.

69%

agree that the growth and complexity of computing workloads means more computing power is needed to get their jobs done.

83%

of firms are saving at least 25% of time compared to previous processes.

65%

say that due to the hypercompetitive market, the need to reduce the time taken to create high-fidelity rendered images/animations is greater than ever before.

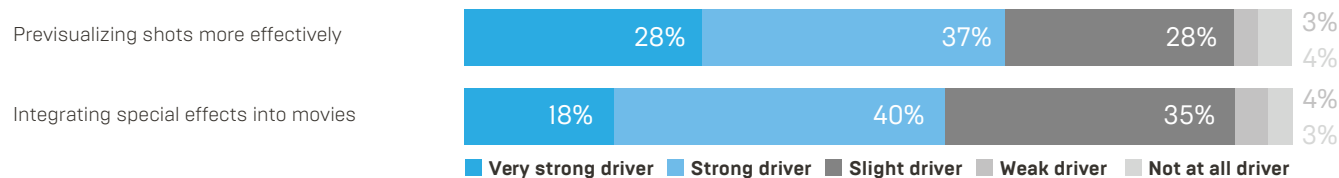


The opportunity in media and entertainment

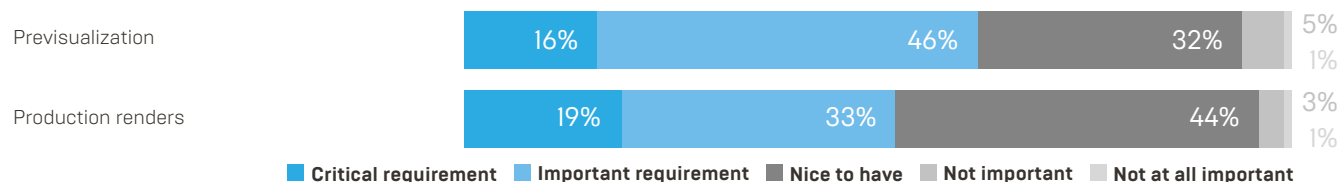
The media and entertainment industry is increasingly using real-time technology to reinvent production pipelines. Where once computer-generated imagery (CGI) was reserved for post-production, forward-thinking creative businesses are able to include CGI both before and during the filming process.

Forrester's research found that the need for real-time rendering solutions is being driven by a desire for better previsualization of scenes and the ability to integrate special effects into productions. For previs, 93% of respondents said this was driving uptake of real-time solutions, while 93% also said this was true for adding special effects.

Which of the following business imperatives would drive your organization to adopt real-time rendering solutions?



How important is the use of real-time technology in the following?





How The Mill is harnessing real-time technology

The Mill is a visual effects and content creation studio collaborating on VFX, digital, and design projects for the advertising, games, and music industries.

Consistently recognized by peers and clients for delivering outstanding work—earning more than 1,000 awards in its 28-year history—it offers creative solutions across studios in London, New York, Los Angeles, and Chicago.

The Mill’s showreel features work for some of the world’s biggest brands including the likes of Nike, Guinness, Adidas, and BT, while its legacy film work includes credits on blockbuster movies such as the *Harry Potter* series, *Gladiator*, and *Les Misérables*.

Here, Joji Tsuruga, real-time supervisor, discusses how the studio is using real-time technology to expand the experiences it creates for clients, and the advantages brought by Unreal Engine.

“At The Mill, we use real-time technology for a wide range of content including AR/MR/VR, experiential, and experimental projects. Depending on the type of content, the development

platforms vary between game engines, off-the-shelf real-time software, and even writing our own custom software.

“We began to see a shift in the industry with a desire for more interactive content, especially in the VR and AR space, and real-time technology enables the audience to experience completely unique content. This is something we simply would not be able to create without it.

“The future of all content will be adaptive, reactive, and interactive, and we’re also seeing a significant shift towards using virtual production on all VFX-related shoots.

“The inevitable extension beyond this is to deliver finished films in real time. This will completely change the way we experience films as, once it is fully real-time, it opens the content up to interactivity.

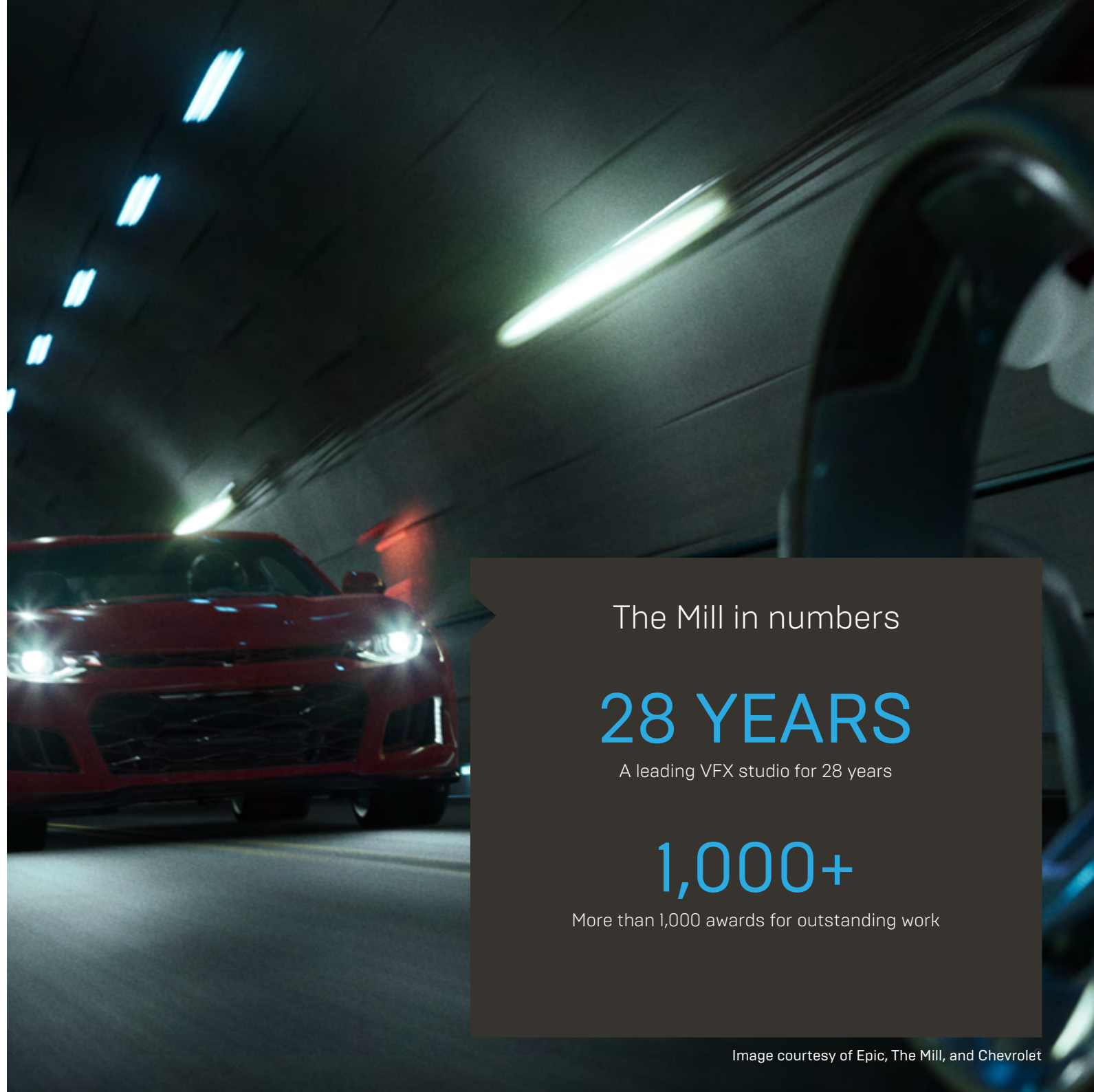
“We take pride in our high-quality visual content and, when we first started using Unreal Engine, we were amazed by its ability to produce beautiful renders—similar to what we were used to seeing using traditional VFX methods—all in real time.

“One huge advantage of Unreal Engine is its ease of use for artists that have transitioned from traditional VFX backgrounds. The Blueprint system is very familiar for artists that are used to node-based workflows as well as visual scripting.

“And, once content is ingested into the engine, the rest of the VFX pipeline lives within a single environment. Everything from layout, look development, camera work, simple compositing, editing, audio, and output can all be done directly out of Unreal.

“There are times when clients may request a very large list of deliverables that are simply too time-consuming or cost-prohibitive to be done efficiently using traditional methods. We’ve found that, by implementing real-time technology into content creation, we can not only manage the workload efficiently but also exponentially expand the possibilities of the creative and deliverables.

“It’s been such a success that The Mill now has a Creative Technology department—a team of technical artists and developers dedicated to working with Unreal Engine and other real-time and software development tools.”



The Mill in numbers

28 YEARS

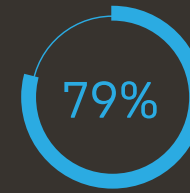
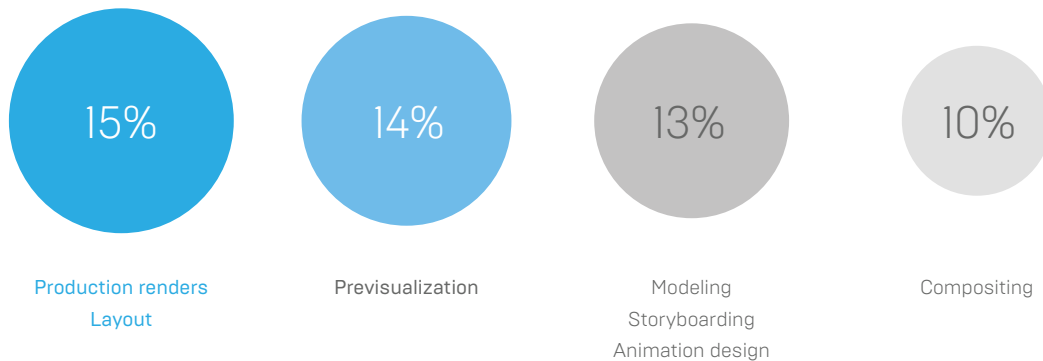
A leading VFX studio for 28 years

1,000+

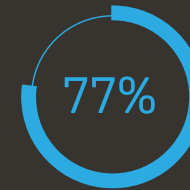
More than 1,000 awards for outstanding work

The future of real-time technology in media and entertainment

Media and entertainment companies currently use real-time rendering for:

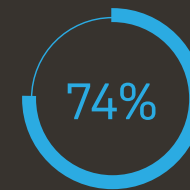
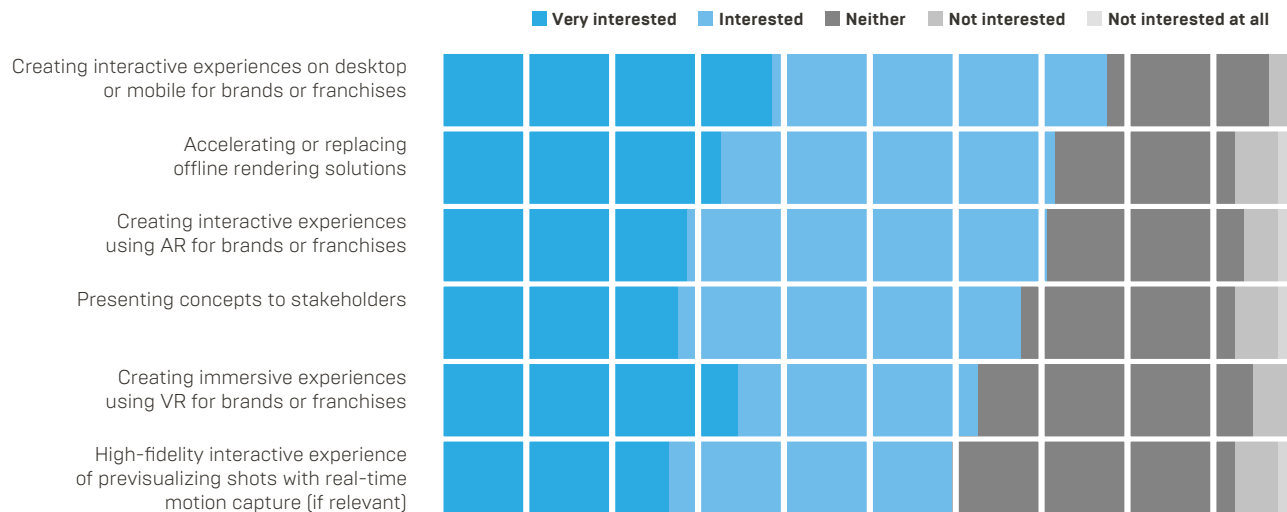


say real-time technology has revolutionized how they are delivering to customers

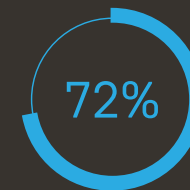


say it has revolutionized the way they collaborate

The real-time applications media and entertainment companies are most interested in:



say customers and stakeholders want to experience projects or sets using immersive technology like VR



say customers and stakeholders value interactive experiences that allow them to easily explore different views and make changes

SAFETY

**HAVE A DISASTER PLAN
FOR YOU AND YOUR FAMILY**



**The
Weather
Channel**

TIP

**LIGHTNING IS 5 XS HOTTER
THAN THE SUN.**

Introducing Unreal Engine

A comprehensive real-time
3D creation platform

Created by Epic Games, Unreal Engine is the world's most open and advanced real-time 3D creation platform. While it continues to serve its original purpose as a state-of-the-art game engine, it has evolved to serve additional industries including film and television, broadcast and live events, architecture, automotive and transportation, and training and simulation.

Today, it has been production-proven on over 80 major motion pictures and episodic television shows, defining virtual production workflows and finding a role in all parts of the pipeline from previs to final pixels.

Find out more and sign up for free at
www.unrealengine.com





“We’re changing the landscape of what can be done with broadcast...mixed reality is providing the ability to tell new stories, and it can be used by any business that wants to engage their audience with more emotional stories.”

Rob DeFranco,
VP Sales and Development, The Future Group





Research methodology

These findings are drawn from a study conducted by Forrester Consulting on behalf of Epic Games in 2018.

The study involved an online survey of 168 decision makers with a knowledge of real-time engine technology across key industries including media and entertainment, manufacturing, and architecture in the USA and UK. The findings provide a nationally representative view of the adoption of real-time technology in these markets.



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