NENT competes with global giants – in real-time

Real-time 3D animation slashes production costs and speeds premieres of highest-quality original content

unity

The challenge
To produce world-class original content with short schedules, a small staff, and tight budgets

Platform
Streaming services, broadcast TV

Project Staff
3-16

Location
Stockholm, Sweden

How does a regional entertainment provider cost-effectively create state-of-the-art content that competes with the world's largest networks and studios? NENT is the leading operator of streaming services, TV channels, and radio stations in Scandinavia, Iceland, and Finland. The company's production companies create content from music competitions and game shows to weekly series and full-length movies. Now, its streaming services compete directly with Netflix and HBO, and soon they'll face Apple and Disney as well

For entertainment studios, original content is king

According to Jens Köpsén, VP and Head of NENT Studios Animation, "Owning your own content is absolutely the key to success in this business. Because buying content is so expensive, we focus on producing originals."

Indeed, NENT is premiering 30 original productions in 2020 and has over 80 original titles out or in development. To continue expanding their production capacity, while aiming to produce Pixar-quality content and staying within tight budgets, NENT has built its animation pipeline based on Unity's real-time 3D platform.

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— Joel Edström, Head of Production, NENT Studios Animation

The results

— 40% more output at 10% the cost of traditional rendering by using Unity’s real-time animation pipeline

— Constant iterations without increasing external rendering costs

— Animation sequences perfected with instant audience feedback

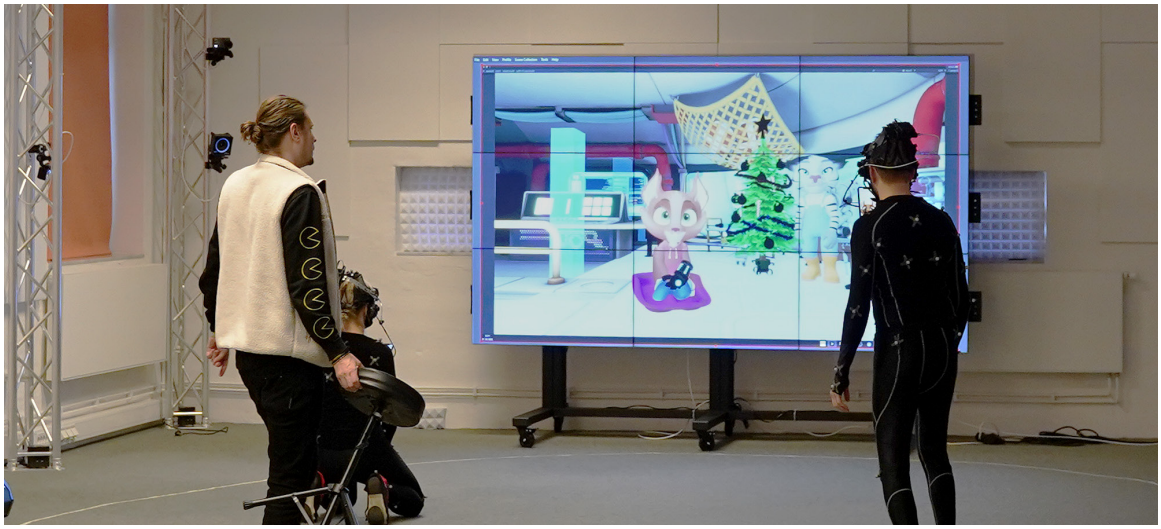
— Streamlined workflows, improved team collaboration, and easily integrated custom pipeline tools with Unity

— Meeting and exceeding the production standards of the world’s largest studios with HDRP

Experimenting with new formats

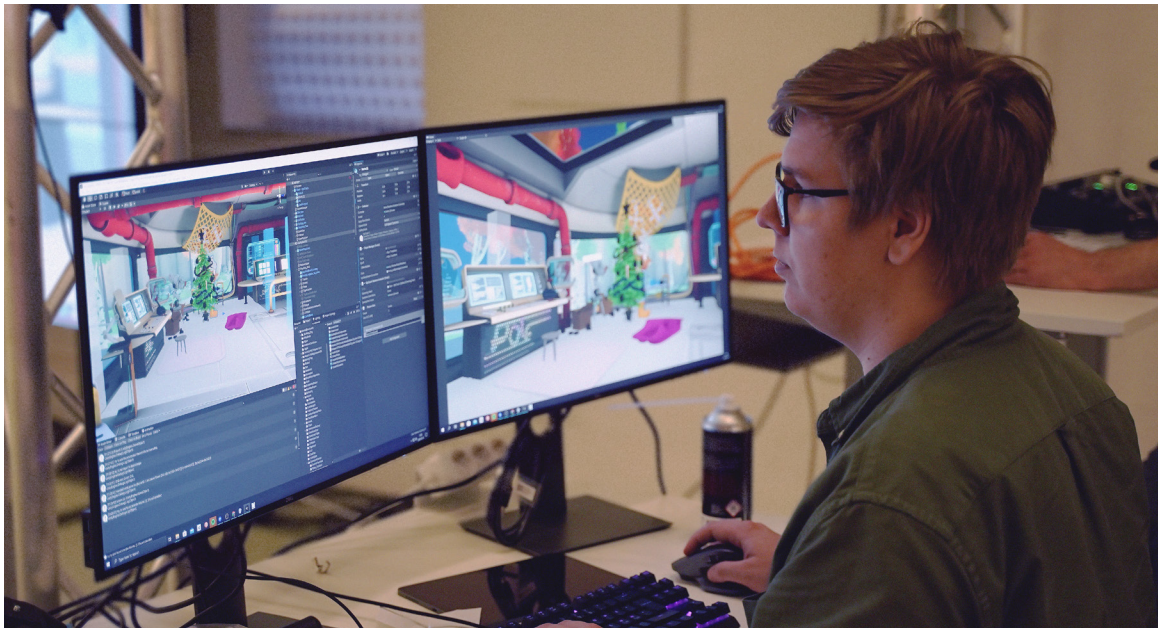
“To compete, the quality of our streaming content has to be as good or better than what consumers expect, which is what they’re used to getting from HBO or Netflix. The only problem is, we have a hundredth of their budget,” says Köpsén. Fortunately, Unity provided an opportunity to level the playing field, and NENT’s R&D team was eager to try it, given their previous experience with Unity. “We had broadcast parts of the 2016 Olympics in 360 VR using Unity,” says Joel Edström, head of production for NENT Studios Animation.

At the beginning, however, VR content was limited, and existing technology, 360 cameras and tools, didn’t have the muscle to convert film stock to realistic, immersive experiences. But Edström continues, “We became very fond of working with Unity, and we created virtual worlds instead. Unity’s rendering gave us the quality we needed – it was a totally new creative playground, and it also produced a quality level that equaled high-end animation studios.”



“It’s so easy in Unity to adjust the look and feel, even after you’ve done so much of the animation and artwork. Unity made many iterations possible for virtually no added cost, so we’d end up with really great scenes.”

— Farshid Tavakoly, Head of Engineering, NENT Studios Animation



Real-time production with Unity

Unity makes animation instantly iterative

Using Unity for nearly every aspect of the asset pipeline, the team built environments and a character, and then rigged it so that when actors put on VR goggles, they're immersed in the fantasy world instead of acting out in front of a green screen.

The first project that made it into production was the story of Fixi, an animated character that serves as the mascot for NENT's children's programming. As Fixi's development progressed, the team found that working with the Unity Editor was quite different from using their traditional workflows and methods. And because modifying environments and characters, choosing camera angles, and adjusting lighting were done with Unity in real-time, creative iteration could take place instantly with an audience of children in the studio.

"The animators could get immediate feedback from the kids. We'd give the character a different appearance, or we'd make changes to her clothes, and the kids would shout NOOO!!! or YAAAY!!!" says Edström.

In fact, the 3D model for Fixi herself started out in early experiments as a fox, and now has her own children's series as a squirrel. "It's so easy in Unity to adjust the look and feel, even after you've done so much of the animation and artwork," says Farshid Tavakoly, head of engineering at NENT Studios Animation. "Unity made many iterations possible for virtually no added cost, so we'd end up with really great scenes."

Live-action MOCAP actor portraying Fixi in real-time

Real-time animation eliminates external rendering for previews

The team had created elaborate environments for Fixi, whose animation sequences are captured in real-time by an actor in a MOCAP suit. “This is when we discovered that not only can we bring actors into a Unity environment, we can just as easily drop in real-time animation,” says Edström.

And most importantly, they can iterate as much as they want. In a traditional animation workflow, teams can spend hours working on a single shot, but if they’re at the end of a waterfall process, further iteration is nearly impossible. With offline rendering, it takes hours of processing just to preview a shot – time that holds up other production processes and is quite expensive. Unity’s 3D real-time rendering with the High Definition Render Pipeline changed all of this for NENT.

“With Unity, it cost us a tenth of what traditional rendering methods would have cost, and it probably increased our output by 40%.”

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“The power of Unity’s real-time lighting and rendering to rapidly improve production times and workflows can’t be overstated. We get instant feedback on our effects and setups and can preview final 4k frames in seconds,” says Tavakoly. And Edström adds, “With Unity, it cost us a tenth of what traditional rendering methods would have cost, and it probably increased our output by 40%.”

Customizing any part of the pipeline

As the group’s engineer, Tavakoly says it’s easy for NENT developers to make Unity do exactly what they need it to do. “Unity is flexible. We’ve built a lot of tools over the years, and have been able to customize Unity to create a robust system that includes our other pipeline components.”

He also notes that since Unity is highly extensible, NENT can easily repurpose content from one platform to another, such as using real-time animations from the TV show in their VR or AR projects. The broadcasting team, for instance, can add AR layers in a sports broadcast, inserting remote, live athletes as holograms to join the team of announcers.

From a business standpoint, the collaboration between artists, designers, and engineers that Unity enables has been a huge advantage. “We need to be very, very smart about how we produce content. With Unity, we have creatives who can do things now that they used to have to wait for programmers to do,” says Tavakoly. The studio found that it needed fewer contributors overall because each one was able to accomplish much more.

Achieving the “impossible” with Unity

As leading creators in a fast-paced industry, NENT consistently pushes itself and its creative use of technology as far as it can. And the Unity real-time 3D platform is a big part of their strategy. As Köpsén puts it, “We want to go way, way beyond our competition.”

“We had someone from a large animation studio visit us. After seeing a demo, they said ‘that’s some of the best quality we’ve ever seen.’ I told them five people did it. And they said, ‘That’s impossible.’ That’s the power of working in Unity.”

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The NENT studio is impressing other creators with its results, too. “We had someone from a large animation studio visit us. After seeing a demo, they said ‘that’s some of the best quality we’ve ever seen.’ I told them five people did it. And they said, ‘That’s impossible,’” Tavakoly says. “That’s the power of working in Unity.”

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Our Team

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Alexander Gustafsson, Directorat Fixi

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Tobias Paulsson, Producer at Fixi


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