

VR can offer plenty of value for your business, however, virtual reality app development can be tricky. Robust virtual reality tools assume importance here, and I will explain the top 10 such tools.

1. Unity Virtual Reality Engine

Unity is one of the most widely used game development engines globally for VR headsets. Game developers create apps, games, and even industrial applications compatible with Oculus, HTC Vive, and PlayStation VR.

Along with natural game dev tools for PC, consoles, and other software platforms, Unity also offers an extensive collection of unity assets for use with AR and VR developer system tools to help creators succeed.

Interact is one tool that creates advanced VR system applications directly from CAD or points cloud collected data. VisualLive is another popular Unity tool that uses AR in real-time as it overlays large BIM and CAD files onto job sites.

These system tools and others like Unity mod manager are excellent for ensuring accurate motion control for VR headsets on PC, building finely crafted VR games, and natural VR mobile experiences on Android and iOS platforms with the Unity API.

2. Unreal Engine For Extended Reality (XR): AR, VR & MR

The powerful Unreal Engine will be another complete suite of developer tools, including VR compatibility. Unreal engine is perfect for many industries: gaming, film, architecture, automotive and transportation, broadcasting, and AR/VR simulation!

Creators are allowed total freedom to deliver state-of-the-art visuals, a rich entertainment experience, and immersive virtual worlds. Like Unity systems, Unreal Engine has a variety of tried-and-true virtual reality and augmented reality developer tools designed to handle any task. As a result, the VR game engine provides game developers with an advanced real-time 3D creation tool for immersive experiences.

3. Blender 3D Computer Graphics Software Toolset

Blender has been a titan in the 3D model and animation industry since 1994. It's free and open-source software built to design 3D printed models, animate 3D models, and use those assets in 3D applications like animated films and VR games.

One of the best features for virtual reality developers will be the built-in rendering tool. Blender has an unbiased path-tracer engine that offers stunning ultra-realistic rendering. This powerful rendering developer tool has a real-time preview, CPU & GPU rendering, PBR shaders, HDR lighting support, and of course, supports VR rendering, modeling, rendering, animation, rigging, sculpting, and simulation processes are compatible on many systems, including Linux, macOS, Windows, Android, FreeBSD, OpenBSD, NetBSD, DragonFly BSD, and Haiku.

4. OpenVR SDK to target SteamVR

SteamVR hardware uses the innovative OpenVR developer tool to experience VR content on almost any VR headset for PC. OpenVR is an API implemented into SteamVR to allow access to other VR hardware.

Game developers can access the OpenVR SDK to build integrations to the SteamVR platform. Valve Index, HTC Vive, Oculus Rift, and Windows Mixed Reality headsets are supported by a few VR hardware products. It achieves this goal by not requiring that applications have specific knowledge of the hardware they target.

Another significant enhancement to OpenVR is natively supported by Unreal Engine 4 and Unity version 5.4+. It is worth mentioning that their Steamworks SDK allows software developers to integrate Steam's matchmaking, achievements, and Steam wallet.

5. Autodesk Maya 3D Computer Graphics Toolset

VR Developers use Autodesk Maya 3D software for crafting realistic characters and professional assets. Maya has a free app tool called Create VR. What does Autodesk Maya do?

This innovative VR developer tool empowers artists and designers to start and work directly next to their 3D design process. Create VR uses a simple curve system and surface tools to explore creators' 3D space and assets while being fully immersed in virtual reality alongside their design.

Composite sketches and modeled assets can also be exported to Maya or other content creation applications. We recommend Autodesk Maya for larger studio productions rather than indie gamers because of its initial difficulty to use.

6. Autodesk 3ds Max® Modeling and Rendering Software

Autodesk 3ds Max and Autodesk Maya are both paid software services Autodesk, Inc. provides for the video game industry. Both are capable of modeling, animation, rigging, keyframing, rendering, and lighting.

Each software has been used to make VR games, television, movies and has a complete 3D toolset with unlimited creative potential. However, the main difference is that Maya mainly focuses on character realism. Autodesk 3ds Max is an all-purpose design for faster modeling and quick editing, especially as a virtual reality developer tool.

3ds Max is an ideal game development tool for novices to 3D animation with an abundant amount of online courses and YouTube tutorials, making the software easier to learn.

7. Eyeware Beam Head and Eye Tracking Software Development Kit

The Eyeware Beam all-in-one head and eye tracker SDK integrates with the API so that VR game developers can create richer gaming experiences. The Eyeware Beam SDK lets developers create head and eye-tracking-based apps to complement VR development tools mentioned in this top ten list.

The SDK provides the capabilities to develop head and eye-tracking-enabled PC solutions with access to tracking data in real-time. The SDK offers APIs for C++ and Python with support for Unity in the works. Application integrators and developers previously depended on dedicated hardware to enable these functionalities for end-users.

When introduced into a PC game, PC gamers can use head and eye tracking to control the in-game camera with real-life head movements. Indie game developers can put the tech to use in VR games to enable eye tracking to manipulate gameplay as head tracking does as an experience similar to virtual reality with iPhones.

Interactive and social games can benefit from providing the ability to live stream with the eye tracker overlay in games to accurately show viewers where they look on the screen. This is an early access API for indie game devs to integrate the tech into PC games, mods, controllers, or whatever you the developer can imagine. The gamers do need a PC and iPhone or iPad but no wearables at all.

Game developers can try out the head and eye tracking software for free. The [Eyeware Beam app](#) can be downloaded on the app store for use in PC games.

The app that turns a Face ID-supported iPhone or iPad, with a built-in TrueDepth camera, into a precise, multi-purpose, six degrees of freedom (6DoF) head and eye tracking device. This means anyone can download the app to turn their iOS device into a head and eye-tracking camera.

It works on over 190 games, including DCS, Microsoft Flight Simulator, Star Citizen, etc. all through a simple app download. It requires OpenTrack, similar to other software-based trackers.

8. Cara VR™ Virtual Reality Plug-in Toolset for Nuke

Another paid application software is [Nuke from The Foundry](#). Nuke operates a little differently by using node-based digital compositing and visual effects. Cara VR is an ingenious virtual reality developer tool with a specialized toolset for creating excellent live-action virtual reality content.

Compositing 360° VR footage takes quite a lot of time. This tool will speed up the challenging process for game artists, so creators have more time to focus on other essential aspects of their envisioned VR developer experience.

The NukeX environment also now integrates the latest version of Cara VR for a powerful developer experience using clean-up, set extensions, 3D element insertion, and more.

9. Autodesk Forge AR And VR Toolkit

A third ingenious VR developer tool by Autodesk's paid services is [Forge](#), which does connect to data streams inside the Unity engine. The software is a cloud development platform that uses web service APIs for developers to build innovative, cloud-powered applications.

2D and 3D designs can be viewed in a safe 3D environment. Forge also integrates seamlessly with other AR and VR developer application tools.

10. Google Cardboard – Cardboard VR Developer Tool

The [Cardboard VR development tool](#) is affordable, lightweight hardware designed for fun and quick experiences on a mobile platform. Make use of the Cardboard SDK to turn a smartphone into a VR software developer tool.

An Android smartphone can display 3D scenes with stereoscopic rendering, track and react to head movements, and interact with apps by detecting when the user presses the viewer button. The Cardboard Design Lab is a free app that helps creators understand how to craft a virtual reality experience using their virtual reality development tool.

Which of the ten VR tools is best for your game idea? Much of that answer depends on a game developer's skillset with C# that is often used for creating desktop, mobile, and VR/AR apps.

The programming languages are a foundation for AR/VR developers, who will likely encounter Unity and Unreal video game engines. Other companies offer powerful VR developer tools not mentioned in this list like Facebook in virtual reality.

Do you have an idea for a virtual reality game? We encourage you to integrate head and eye tracking into your VR games for added realism to the virtual reality gaming experience.

Desktop Tools

This is a collection of tools VR developers are using to create native application experiences, typically for Windows machines.

Unity 3D

Unity is by far one of the most ubiquitous of tools being used today for VR development. At its heart, it's a game engine. It has a direct VR mode to preview your work in an HMD (Head Mounted Display) which can really boost productivity by designing for VR within a virtual environment. Unity is quickly becoming the default tool for VR development due to its ease of use and ability to quickly prototype VR applications with it.

There's a huge community around this tool and so there are plenty of resources and documentation to learn from. A [market of 3D assets](#) can get you up and running in a short amount of time. If you're familiar with C# or JavaScript, you can get into the scripting pretty easily as well. All major HMDs are supported and you can export your work to almost any platform imaginable, even WebGL.

[Learn more about Unity.](#)

Unreal Engine (UE4)

One of the main competitors of Unity 3D, Unreal Engine is also a gaming engine with VR integrations, [an asset store](#), and [great documentation](#). The graphics are debatably more advanced and realistic and the learning curve is similar to Unity. Many of the VR demos built with UE4 are much more life-like and smoother to navigate within. It provides great

performance with the conveniences of a modern editing environment. UE4 also exports to most platforms but exports to slightly less than Unity.

[Learn more about Unreal Engine.](#)

3DS Max & Maya

These are Autodesk products for modeling, animation, lighting, and VFX. They don't have VR support by default but through pricey plugins instead. AutoCAD and 3DS Max are long-time standards in the architectural design industry and have some of the most precise tools in their UI. Like almost all GUI's for building 3D environments and drawings, these tend to be quite massive UI's with a lot of tools hidden behind menus, sub-menus, and toolbars.

[Learn more about 3DS Max, Maya, and other Autodesk products.](#)

Blender

Blender is quickly becoming a favorite modeler for many VR developers. It's free and open source software written in Python and is available for Windows, Mac, and Linux. There's a huge community of people devoted to this software and its use. Many websites provide tutorial videos, forums, and documentation.

The software's [official documentation](#) is also quite comprehensive. Mainly for modeling, UV mapping, lighting, rigging, and animation, you can export your models to a multitude of formats that can then be used with many other tools. There's even a great plugin for exporting your creations into JanusVR with a free open source plugin called [FireVR](#).

[Learn more about Blender.](#)

SketchUp

Google's SketchUp is a basic modeling application with a very low learning curve that can get anyone up and running in a short amount of time. The tutorials on the website are excellent, not only teaching the basics of the software but also as introductory lessons to basic 3D modeling concepts. You can quickly learn the basics of modeling with SketchUp and then move onto more advanced tools like Blender if you desire. It's really great for modeling, quickly learning the lingo, and then moving onto bigger and better things. There's a free trial version of this software.

[Learn more about SketchUp.](#)

WebVR Tools

These are tools used for developing [WebVR](#) in the various browsers. Most browsers are still struggling with headset device support, but they're getting much closer to be included in the main builds of modern browsers like Chrome and Firefox. However, most phones can be detected with the [WebVR-polyfill](#) and if turned sideways, switched to a dual display mode that

you can use with Google Cardboard, Samsung VR, or other headsets that are built to be used in conjunction with a smart phone.