



**Metaverses and other
shared immersive
experiences.**





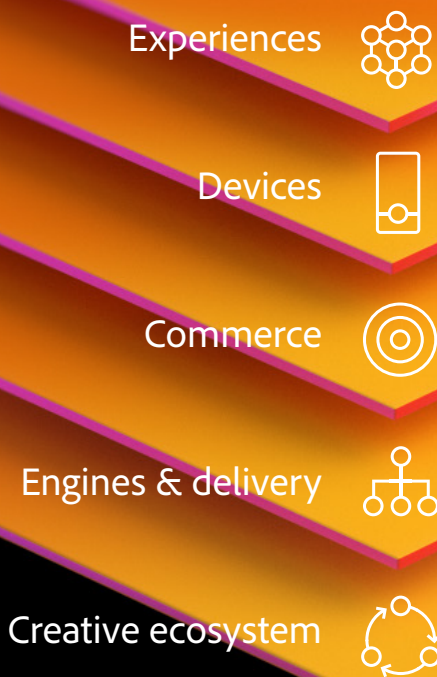
Increasingly we're using the digital world to do things that we once only did in the physical world. The ongoing conversation on the metaverse reflects the fact that the distinction between what people do in the physical and virtual world is blurring."

Shantanu Narayen

CEO, Adobe

Executive summary.

Metaverses and other shared immersive experiences are the new wave of digital interaction. These immersive experiences will include metaverses — rich, persistent, shared interactive experiences with collaboration and co-creation, as well as fully functioning shared economies — along with other experiences targeted to shopping, job training, play and gaming, education, remote meetings, cultural experiences, and more.



There are many levels in the metaverse “stack” with a range of companies playing key roles.

Adobe products fuel immersive experiences today, and our role will expand in the future. Our 3D and immersive collaborative content creation products, such as Adobe Substance 3D and Adobe Aero, are industry leaders in creating today's immersive experiences, including games, immersive commerce, and augmented reality environments. We are innovating to allow creators and brands to do more and to make 3D and immersive creativity accessible to anyone.

Shared immersive experiences require innovative new methods of commerce, marketing, experience delivery, analytics, and personalization — services that Adobe's Digital Experience tools will provide.

Now is the time for companies to get “metaverse-ready.”

Being metaverse-ready will demand a commitment to a democratization of everything from content creation to journey development and delivery. Adobe can help educate brands and content creators to define and clearly articulate the shared vision they will bring in the metaverse. Smart companies should adopt 3D and immersive content creation. It will help them prepare for the immersive experiences of

tomorrow — and make their product design, marketing, and ecommerce workflows cheaper, faster, and better today.

Virtual creations and goods, from art to clothing and accessories, will be an important part of shared immersive experiences. Ensuring their authenticity will be essential.

Adobe's work with the Content Authenticity Initiative (CAI) will help ensure that consumers can trace the provenance of virtual creations, including how they were edited. The work of the CAI will also support digital artists getting credit for their work.

PART ONE

What are immersive experiences?

An immersive experience pulls you into a digitally created, often three-dimensional, world. Many shared immersive experiences will allow you to manipulate and interact with virtual objects and with other visitors. While there's lots of hype and discussion about the metaverse, we believe there will not only be many metaverses, but many other kinds of shared immersive experiences as well.

Some immersive experiences will be delivered through virtual reality and fully envelop the visitor. Others will be delivered through augmented reality and mix virtual experiences with the physical world. Still others will be delivered through the web and other platforms.

Metaverses are a unique type of immersive experience that are persistent and shared. They present an extensive virtual world in which you can interact with other people who may be miles away from you. Economies in the metaverse are also live, persistent, and shared.

Metaverses and shared immersive experiences enable entirely new kinds of collaboration and co-creation and unlock new ways for brands and customers to interact. That can play out in many ways, from remote co-workers developing a new product together in a virtual design studio to customers customizing a jacket or pair of pants to make it their own, then seeing exactly how it will look on an avatar that mimics their shape and size.

There will be many types of immersive experiences beyond metaverses. A few examples include:

- **An augmented reality shopping experience** that helps consumers make decisions by showing 3D images of virtual goods in the physical world.
- **A virtual reality job training** that helps new workers learn a complicated task.
- **An immersive virtual museum** that exhibits vastly more of the museum's collection than can be displayed physically.

Digital art and virtual possessions will play an important part in some immersive experiences, helping people express their personalities and sensibilities in this new space. Further, the metaverse will reimagine texture and tactile experiences for visitors. The growing marketplace for digital assets is a significant new opportunity for members of the creator economy.

PART TWO

Adobe's values.

In our work in immersive experiences, Adobe is applying our long-standing values, including our commitment to open standards, such as PDF, to facilitate the free flow of ideas; our mission to enable creativity for all and change the world through digital experiences; and our dedication to empower creative artists to prosper from their work.

Here's how those values apply to immersive experiences:

We support open standards and platforms. We believe that immersive experiences work best for visitors, creators, and brands if experiences share a common set of open standards that let everyone know what to expect. We support and contribute to the development of leading standards for immersive experiences, including USD (Universal Scene Description), one of the leading 3D/immersive file formats for authoring, and glTF (Graphics Language Transmission Format), a standard file format for three-dimensional scenes and models. Creators and brands should be able to create and co-create an asset once and distribute it everywhere.

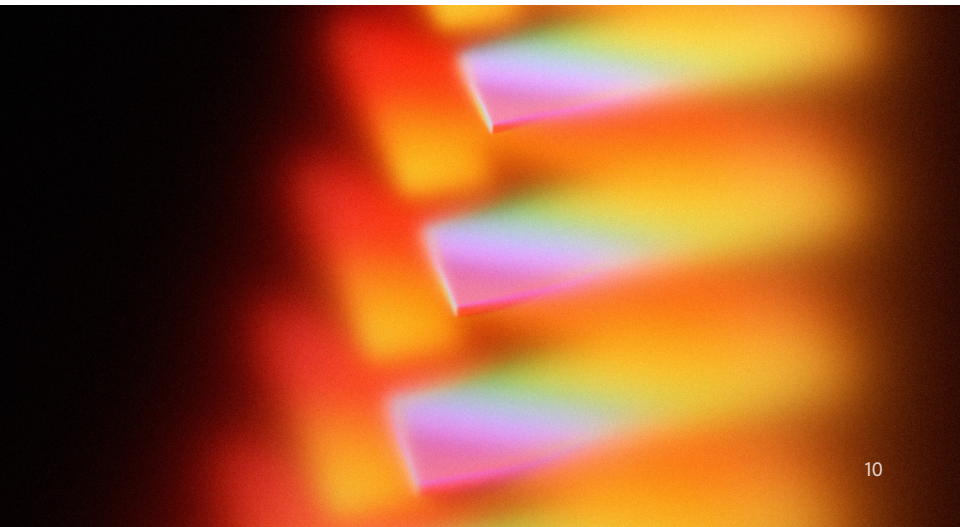
3D and immersive creativity should be accessible for all.

Immersive experiences are poised to become a dominant form of interaction, and no one should be left out of the conversation. Adobe is committed to providing 3D and immersive creativity

tools that allow anyone to express their point of view. We will also supply the tools that empower people to collaborate and co-create content for — and within — metaverses and other shared immersive experiences.

We're committed to helping creators, communicators, solopreneurs, and businesses of all sizes leverage immersive experiences. At Adobe, our mission is to change the world through digital experiences, and we believe immersive technology will add rich new ways for individuals and businesses to interact. We're committed to helping deliver and optimize those new experiences.

The provenance of virtual creations, including how the asset was created, should be clear to all. The market for virtual creations represents an important new way for artists to profit from their work and for consumers to support creators they admire. That marketplace will only thrive if there is confidence about the provenance of what's being traded.



PART THREE

Adobe's role.

For nearly 40 years, Adobe has helped creative people and brands adapt and succeed through major technological shifts, including the rise of desktop publishing and digital imaging, the development of web and mobile interfaces, and the growth of digital marketing and commerce. The development of the metaverse and other immersive experiences is the natural evolution of trends in 3D content creation; personalized, content-driven marketing experiences; and the development of digital assets and artwork — all areas in which Adobe has long been a leader.

In addition to our internal innovation, we have invested significantly in bringing in new talent and technology in the 3D and immersive fields, including the acquisitions of [Mixamo](#), [Allegorithmic](#), and [Medium](#). We're committed to helping our customers build the tools, capabilities, and processes they need to succeed as experiences become increasingly immersive and shared.

In content creation.

Adobe's content creation tools power today's immersive experiences. Our Substance 3D tools are industry standards for creating beautiful and realistic 3D objects and scenes. Aero enables you to create augmented reality experiences with no complex coding. And our flagship products like Photoshop and Illustrator

are important parts of many 3D workflows.

These applications are used to create the content in many of today's immersive experiences. Games are the most popular and sophisticated immersive experiences available today, and the vast majority of multi-player games, including Fortnite, Halo, Final Fantasy, and Flight Simulator, are created with Substance 3D. Our tools have also driven the content for breakthrough AR experiences, including examples from the [Smithsonian](#) and [Amazon](#).

Adobe will push the frontiers of 3D and immersive creation and make it accessible to all. Our unparalleled team of scientists, engineers, and product experts are pushing the boundaries of what's possible in 3D and immersive creation:

- We'll soon debut Modeler, which allows you to sculpt 3D objects with an interface that combines natural, fluid gestures in virtual reality and the precision of a desktop interface.
- We're innovating to make it easier for 3D artists to collaborate.
- We're developing sophisticated new 3D content creation capabilities that allow creative people to completely re-imagine how they create in new 3D and immersive worlds and do things they previously couldn't have imagined.
- Aero helps creators and brands distribute augmented reality assets and interactive scenes across different immersive platforms that accept open standards like USD.

- We're working to democratize 3D creation, developing accessible tools that anyone can use to express their ideas and work with others to co-create, including within a shared immersive experience.

Adobe is the leader today in helping deliver digital experiences across channels, and we will continue to be a trusted partner as channels evolve. We will provide the core capabilities necessary to deliver shared immersive experiences.

In the area of commerce.

- Enterprises around the world trust Adobe to deliver commerce experiences today, as well as the marketing experiences to support them.
- As the web evolves to include more immersive experiences, commerce will be a core element. Ownership of artifacts, avatars, and even real estate will become more distributed. Buying, selling, trading, and displaying these items will happen with the support of Adobe Experience Cloud, including Adobe Commerce capabilities.

In the area of experience delivery.

- Adobe Experience Manager (AEM) is the leading experience delivery and asset management solution for all types of digital media. AEM will evolve to be the center point of asset

delivery and asset management solution for all types of digital media. AEM will evolve to be the center point of asset governance, interaction, collaboration, and co-creation.

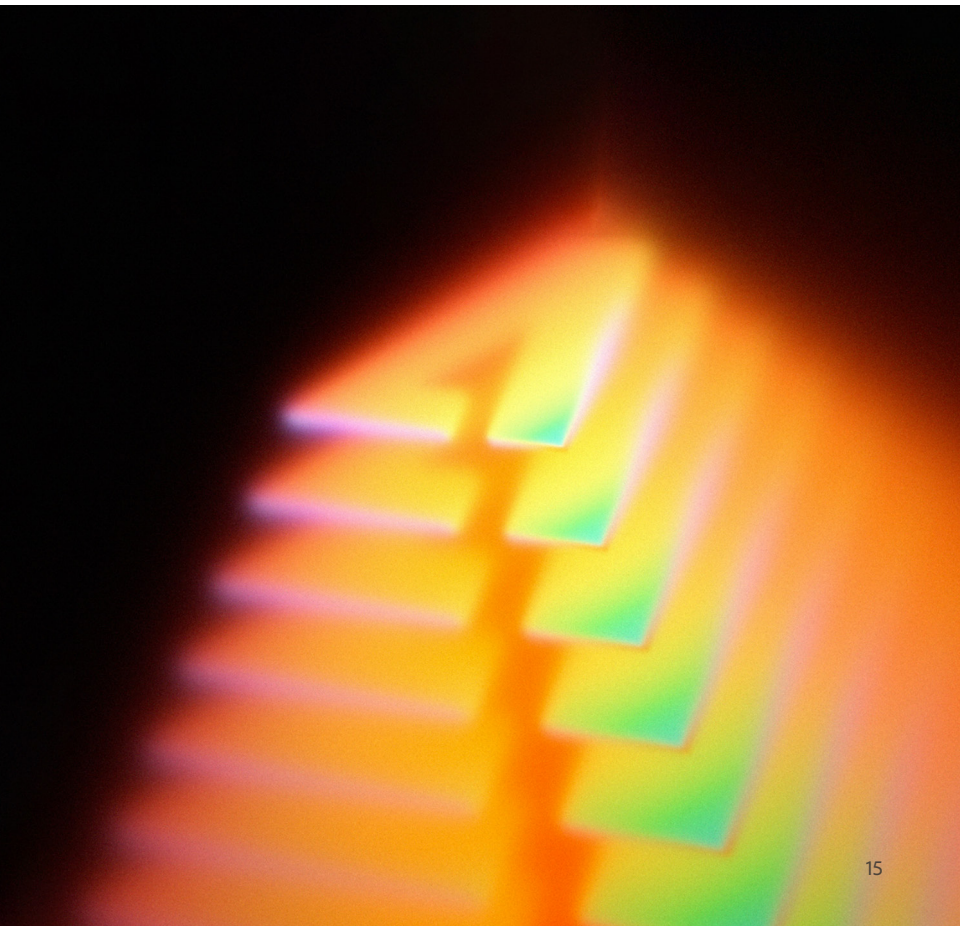
- With Adobe Workfront, we enable creators to easily bridge the worlds of creativity, asset management, and distribution with AEM.
- AEM and Workfront provide capabilities that will be integral to our customers' future efforts to build scalable immersive experiences that leverage 3D assets and artifacts, including those developed within and outside the enterprise. For brands leaping into the metaverse economy, Workfront becomes the new immersive "office" where the work of co-creation happens.

In the virtual asset marketplace.

Adobe's work with our industry partners in the Content Authenticity Initiative will provide increased transparency about virtual creations. This collaboration across partners in the governance of content is critical. Within immersive experiences, people will want to express their personalities through digital assets they wear and display. In many cases, they'll want to have a personal connection to their virtual possessions and be able to trace the creations back to creators they admire.

Our work with the Content Authenticity Initiative will provide insight into how virtual creations are made, including information about the digital artists involved.

Our tools empower companies and individuals who choose to enter the marketplace for digital assets. Many of these assets are created using Adobe products, including Photoshop, Illustrator, and Substance 3D. Behance helps creators showcase their digital assets within their Behance profiles. And our Experience Cloud applications will help companies establish the right approval and workflow process for assets and share those assets with the world.



PART FOUR

How brands can get metaverse-ready.

To be metaverse-ready, start creating 3D and immersive content now to avoid playing catch up later on. Doing that prepares brands for the immersive future and pays significant dividends today. Brands can start by developing a clearly articulated strategy for how they want to engage in the metaverse, including the types of immersive experiences and content they want to create. Take your deep customer and market understanding and find ways to create value for your customers in this rapidly developing digital space.

You can use these skill sets today to bring remarkable efficiency to product design and marketing workflows — and you'll gain the technical proficiency you need to make the most of the metaverse as it becomes an everyday reality.

Benefits today.

Smart companies today are using 3D design to accelerate product design and the development of marketing and ecommerce assets.



Product design: 3D creativity can shave weeks or months off the development of products, eliminating much of the

need to build and ship physical prototypes and allowing companies to test demand for a product on social channels before they've even created a physical version of the design.



Marketing and ecommerce assets: Rendering marketing and ecommerce images with 3D creative software is cheaper, quicker, more sustainable, and more creative than shooting images in a photo studio. With one set of rendered product images, you can easily change the background to make the images appropriate for different cultures and platforms. And if you tweak the product design, you can make those changes to your images in minutes in software, as opposed to the days or weeks involved in getting a crew of artists and technicians back into a photo studio.

Future benefits.

Creating 3D and immersive content helps companies prepare for the immersive future in a number of ways.



Freedom to experiment: Tomorrow's immersive experiences will grow out of thousands of short-term experiments and partnerships among brands. Many of these opportunities will crop up quickly and having the flexibility to quickly test and iterate in 3D will make it much easier for brands to participate and find out what works and what doesn't.



Library of assets: As immersive experiences become more commonplace, brands that have already built a rich library of 3D assets that reflect all their products will be able to fully participate immediately and gain a first-mover advantage.



Muscle-building: Creating for 3D and immersive platforms requires new skills, talents, tools, and workflows. By creating in 3D now, you start building the muscle and learning the lessons you'll need to succeed in 3D and immersive environments.

This is also the time for brands to think about how metaverses and other shared immersive platforms can deepen their relationships with customers. How can you use the enveloping nature of a metaverse to draw customers into the world of your products — and help them see how those products fit into their own world? How can you engage customers by offering them opportunities to co-create a product that's perfect and unique for them? The metaverse will fundamentally change the way brands attract and engage customers — and now is the time to plan the ways this medium will change the customer experience.



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