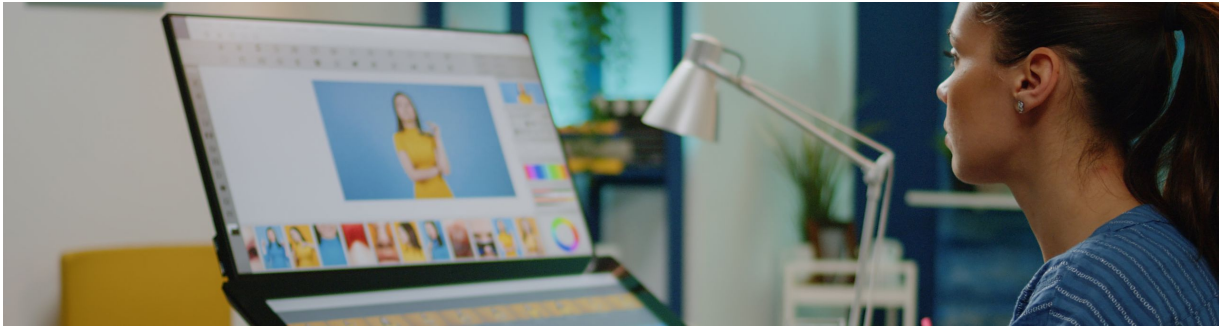


How 3D Visualization Reduces Uncertainty in Retail Purchases



Most shoppers form their first impression of a product by looking at images, long before they read a single review or description. In fact, [83%](#) of US shoppers say product images strongly influence their purchase decisions. Why? Because customers engage with products visually first. Yes, descriptions and reviews matter too, but images do the initial heavy lifting. This holds especially true when customers buy a product for the first time or shop from your store for the first time.

However, this is just the beginning. Guiding your customer from interest to conversion takes effort, especially as their expectations for a visual experience have evolved dramatically. That's where features like 3D product visualization and augmented reality step in. These tools do more than just engage your customers, they can drive real value for your business. In this blog, we'll cover the following:

- What is 3D product visualization?
- What is a 3D product configurator?
- Why 3D visualization matters in ecommerce
- How 3D visualization reduces uncertainty in retail purchases
- The ROI of 3D product visualization

- Success stories of brands using 3D product visualization
- How to integrate 3D product visualization into your store

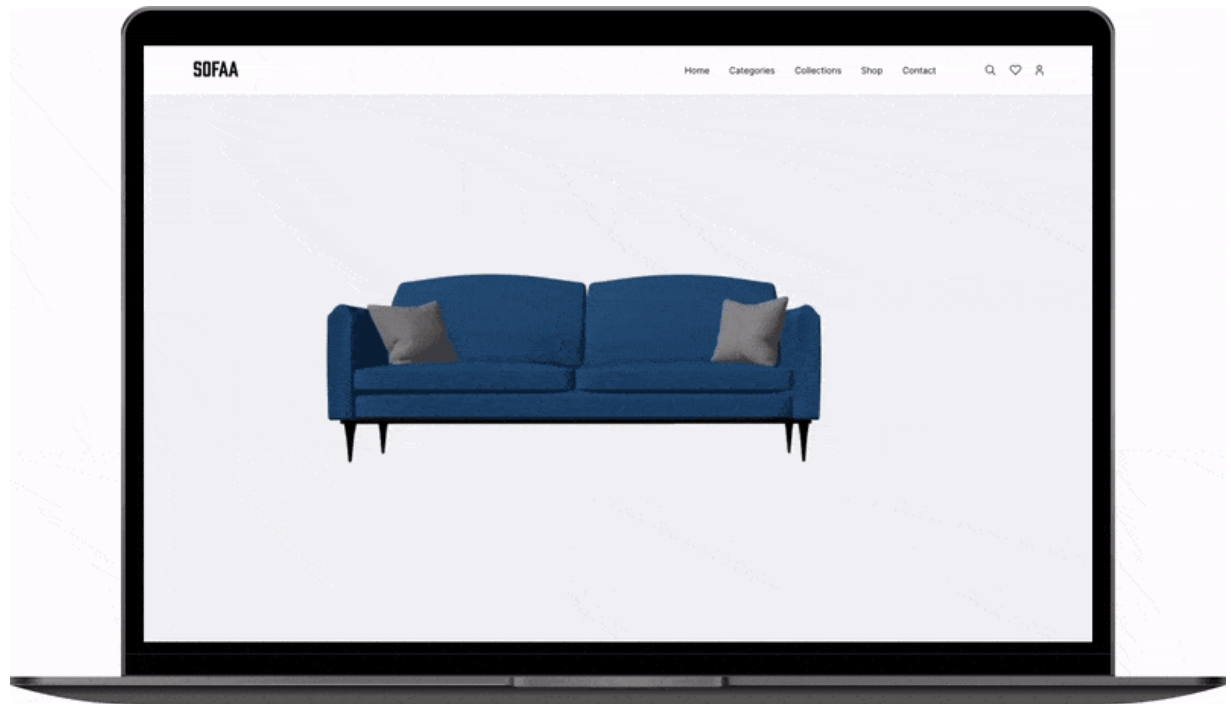
What is 3D product visualization?

3D product visualization creates three-dimensional digital models of a product. Unlike 2D images, 3D models allow customers to take a detailed look at products from several angles. The 3D modeling and rendering build realistic visuals, providing an immersive experience for customers.

What is a 3D product configurator?

A 3D product configurator is a tool that combines interactive configuration with 3D viewing. It allows customers to change attributes such as size, color, and material, and instantly applies those changes to the 3D model, generating real-time visuals of the customized product.

Why 3D visualization matters in ecommerce



According to a study by [Sales IQ](#), only 14.5% of product page views result in an add-to-cart action, even though product pages account for 43.8% of all views. Many brands overlook this stage and focus instead on optimizing the cart and checkout experience.

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An unengaging customer experience can cause shoppers to drop off at the product page. This is where 3D product visualization can make a difference. Flat images have limitations. Customers can't accurately assess size, scale, or fine details like texture and material.

With 3D visualization, customers gain more control through features such as rotating, zooming, and adjusting product attributes. Combined with augmented reality, 3D technology helps customers better visualize dimensions in real-life settings.

By offering these interactive experiences, 3D visuals increase customer engagement. For example, 360° product views can boost conversion rates by up to [40%](#). Visual content also attracts 94% more views than text-only content.

How 3D visualization reduces uncertainty in retail purchases

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Bringing product images to life.

Product images give customers a starting point to inspect items, but 3D models offer a more immersive, lifelike viewing experience. They allow shoppers to examine products from every angle.

These interactive experiences help customers explore products more closely and better understand details like texture, material, and color. According to 3D Imaging Market Research, [82% of product page visitors](#) activate the 3D view.

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When size matters, 3D product visualization helps customers compare dimensions across brands or variants. For those focused on quality, the zoom feature offers a closer look at finer details such as stitching and texture.

Setting accurate customer expectations.

One of the most common reasons customers feel dissatisfied with retail purchases is that the product doesn't match what they saw during the buying process. The gap between "what you see" and "what you get" often leads to returns and buyer's remorse. Flat product images can mislead shoppers due to manipulated lighting or editing meant to enhance appeal.

3D product visualization addresses this issue by generating realistic 3D models that customers can rotate and inspect from multiple angles. In fact, 3D models are quickly becoming more popular than videos for evaluating products. According to research by Cappasity, [95% of respondents](#) prefer interactive 3D representations over video playback.

For refurbished or used products, 3D visualization offers transparency by accurately showcasing the product's condition. This helps set realistic expectations, gives customers confidence in their purchase, and reduces return rates.

Improving customer decision-making.

As a business owner, you might believe retail purchases benefit from impulsive buying behavior. While that's true, shoppers can be just as quick to abandon their carts or return products if they feel dissatisfied with what they receive.

What does this mean? Helping customers make confident purchase decisions is just as valuable to your business as it is to them, and 3D product visualization can help you get there. With lifelike visuals and interactive experiences, shoppers gain clarity and confidence before they buy.

In a survey conducted by Threekit, [66% of shoppers](#) said 3D configurators increased their purchasing confidence. The same survey found that 60% of 1,869 U.S. adults who shop online are more likely to buy a product when it's shown in 3D or augmented reality (AR).

By combining 3D product visualization with AR, you can offer immersive features such as product overlays, like previewing how an item fits into a real-world space. When shoppers have the chance to explore and experiment, they're more likely to make informed decisions they feel good about, and less likely to return the product.

Experimenting product variants.

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Imagine a furniture brand that sells tables to spas, physiotherapists, and hospitals. For configurable attributes like color, material, shape, size, and adjustments such as height and inclination, the brand would need to provide thousands of photos to show every possible variant. This makes customization overwhelming for customers.

Now consider the challenge on the brand's side. Rendering and storing that many images for a single product can create serious performance issues. Extending this across the entire product portfolio can make the online store heavy and difficult to navigate.

This is where 3D product visualization provides a better solution. It allows customers to see how their attribute choices, such as size, color, or material, affect the final product in real time. As they make adjustments, the visual updates immediately, making the customization process simple and engaging.

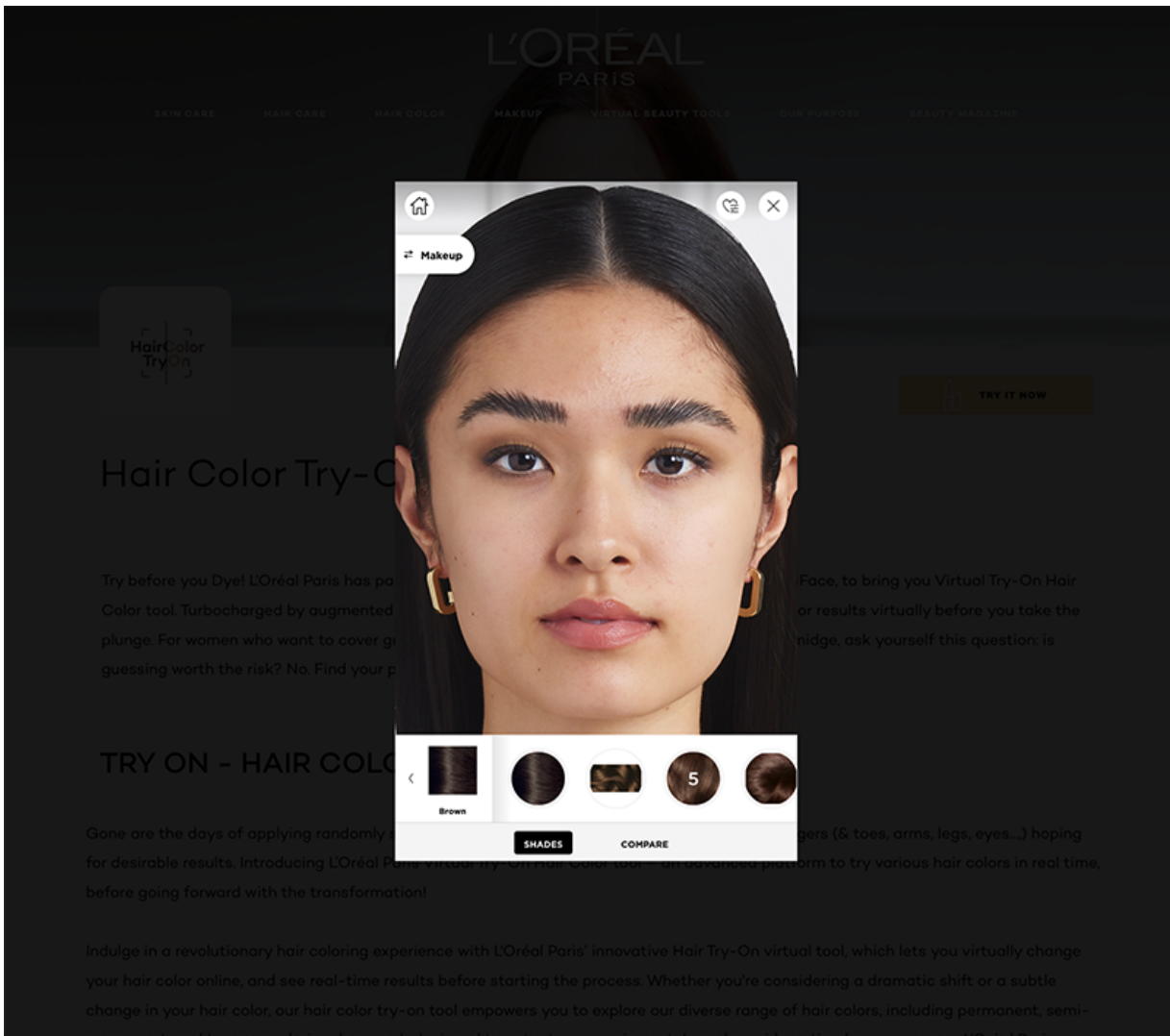
[L'Oréal](#), the French cosmetics giant, uses 3D product configuration and augmented reality to help customers try on makeup virtually. Through the brand's AR apps, users can see how different makeup products look on their own faces.

By enabling virtual experimentation with more than 400 shades, L'Oréal helps customers choose with confidence. At the same time, the brand reduces costs by minimizing the need for physical product testers.

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In short, 3D visualization allows customers to see every product variant, helping them choose a customized version that fits their needs. For retail brands that offer customizable or made-to-order products, this technology simplifies how variants are presented and encourages more confident purchasing decisions.

Reducing decision fatigue.

For consumers, having thousands of options is both a blessing and a challenge. With so many products to choose from, making a purchase decision can feel overwhelming. The process becomes even more uncertain for impulsive buyers who may not have a clear idea of what they want.

3D product visualization can help simplify the decision-making process. With real-time customization, detailed imagery, and interactive features like 360-degree views, shoppers can quickly see which configured variant suits them best and move more confidently toward

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checkout. According to a study by Threekit, [44% of buyers](#) add an item to their cart after using a 3D configurator.

Blurring the line between online and offline experience.

The experience of getting a closer look at a product before buying is something online shopping has missed for a long time compared to offline shopping. 3D product visualization bridges this gap and helps blur the line between online and offline shopping.

By dynamically generating realistic 3D models, product configurators allow customers to experience live shopping. When combined with technologies like augmented reality, brands can offer [virtual try-ons](#) for clothes, accessories, cosmetics, and more. Features like product overlays help furniture brands and interior designers with space planning by allowing customers to see how products fit into their real-world environments.

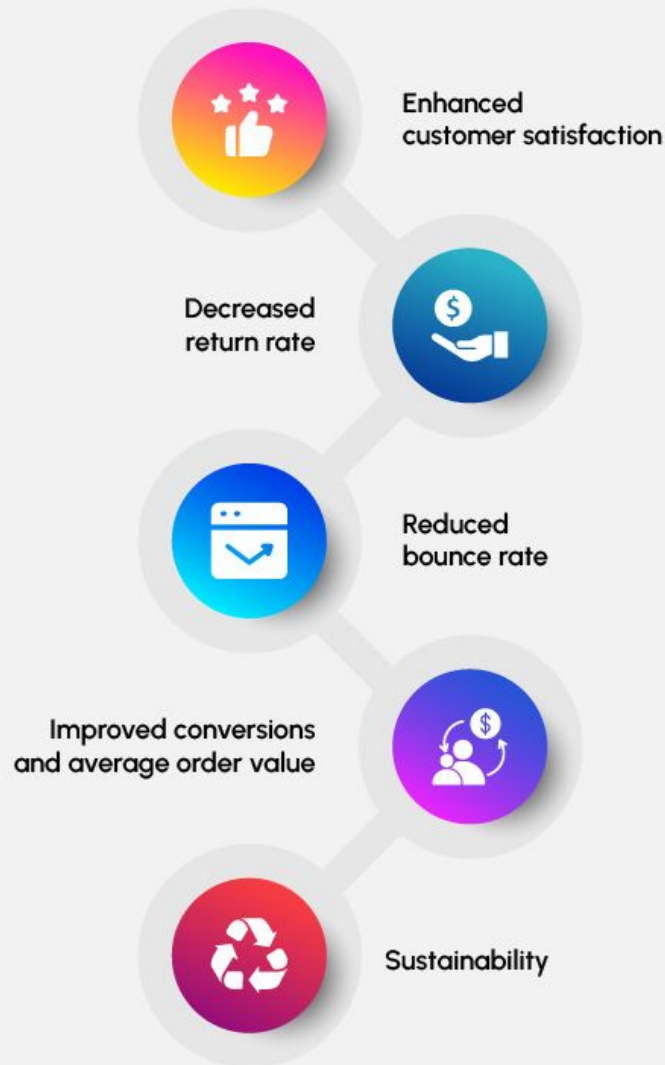
The ROI of 3D product visualization

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The ROI in 3D product visualization



Enhanced customer satisfaction.

3D product visualization allows customers to take a closer look at the minute details of a product. It gives them a deeper understanding, while features like zoom and 360-degree views help reduce

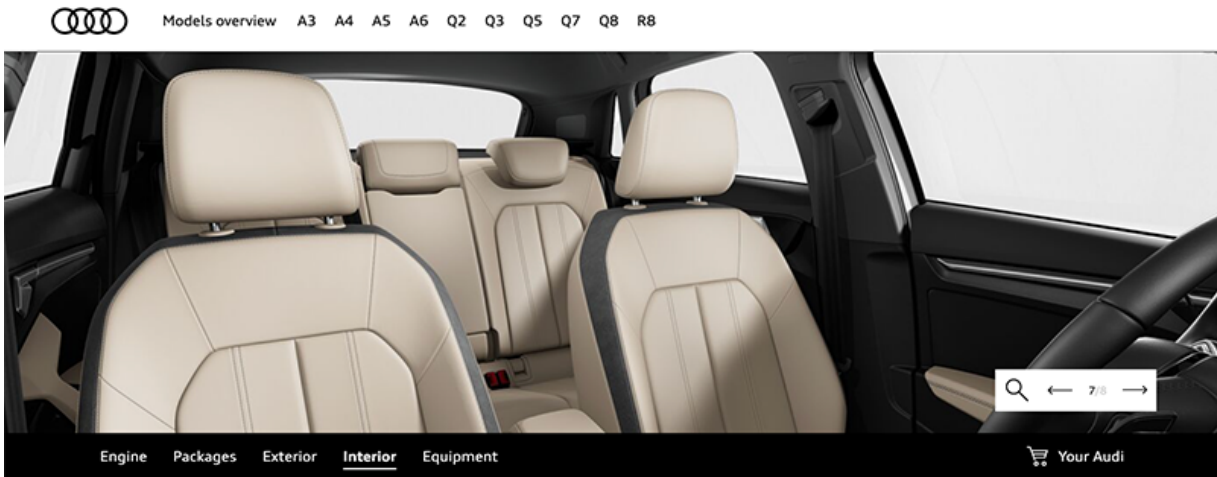
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uncertainty.

Shoppers often want to examine every detail, especially when buying high-value items or products from luxury brands. Audi, for example, has seen a [66%](#) increase in user engagement and improved customer satisfaction ratings by using a 3D configurator.



Interior

Fabric "Index"



Leather/leatherette "mono.pur550" combination interior design selection



Standard seats in front, Leather/leatherette "mono.pur550" combination interior design selection Seat upholstery: Parchment Beige-Parchment Beige-Steel Gray Dashboard: Black-Black Carpet: Black Headlining: Steel Gray

A3 Sportback ^

Basic 35 TFSI 110 (150) kW (HP)
tiptronic

Your Audi

Print Send e-mail

Dealer enquiry

> New configuration

By instantly showing customizations and product variations in real time, 3D visualization helps customers make more informed purchase decisions and increases overall satisfaction.

Decreased return rates.

Product returns cost your brand hard-earned ecommerce dollars. On average, processing a return costs [21%](#) of an order's value. Handling returns, processing refunds, covering transportation costs, and managing customer dissatisfaction all place a strain on your bottom line.

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Adding a 3D product visualization feature can help reduce returns. When customers see product variations during the customization process, they know exactly what they're buying. Because there's no gap between what they expect and what they receive, dissatisfaction decreases and return rates drop. After implementing 3D viewing, [Home Depot](#) reported a 35% reduction in product returns.

Sustainability.

Lower return rates positively impact your brand's sustainability. Fewer returns lead to less packaging waste and lower repacking costs. They also reduce carbon emissions by decreasing the logistics needed to handle returned goods and ship replacements.

In addition, fewer returns mean your brand deals with fewer damaged items, cutting down on processes like refurbishing, repairs, or discarding products that can't be resold. Overall, your B2C brand can use warehouse and logistics resources more efficiently, helping to minimize energy use and reduce waste.

Reduced bounce rate.

Interactive shopping experiences not only help your brand stand out but also keep customers engaged longer. According to market research by Cappasity, more than 8 in 10 people choose to interact with 3D features.

3D product configurators can also increase session time and significantly reduce bounce rates. In fact, [34%](#) of shoppers engage with the 3D view for more than 30 seconds. The longer they stay, the more likely they are to continue their purchase journey and convert.

Improved conversions and average order value.

By delivering memorable customer experiences, your ecommerce store can increase conversions. When shoppers can examine products in detail, they feel more confident in their purchase decisions and are more likely to add items to their carts. [Rebecca Minkoff](#), a US fashion brand known for designer handbags and clothing, saw a 44% increase in the likelihood of users adding an item to their cart after using a 3D configurator.

Beyond conversions, 3D product configurators can also help raise your average order value. Shoppers can explore different product variations and may order multiple versions of a configurable item. According to a study by [Threekit](#), 42% of consumers say they would pay more for a product if they could view it in 3D or AR.

Success stories of brands using 3D product visualization

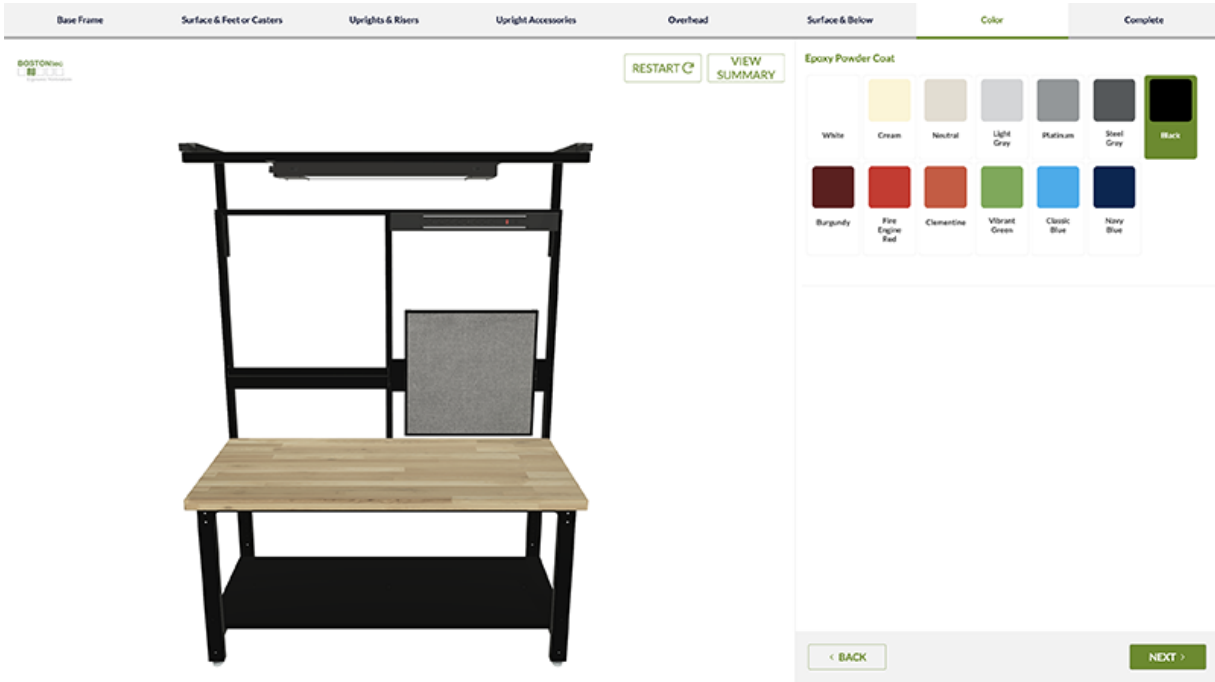
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Target.

Target, the retail giant, embraced 3D product visualization by creating 2,000 photorealistic 3D models. As a result, the brand reduced costs by 70% compared to traditional photography and cut its go-to-market time by 75%. Target also created virtual rooms where customers can view products in 360 degrees.



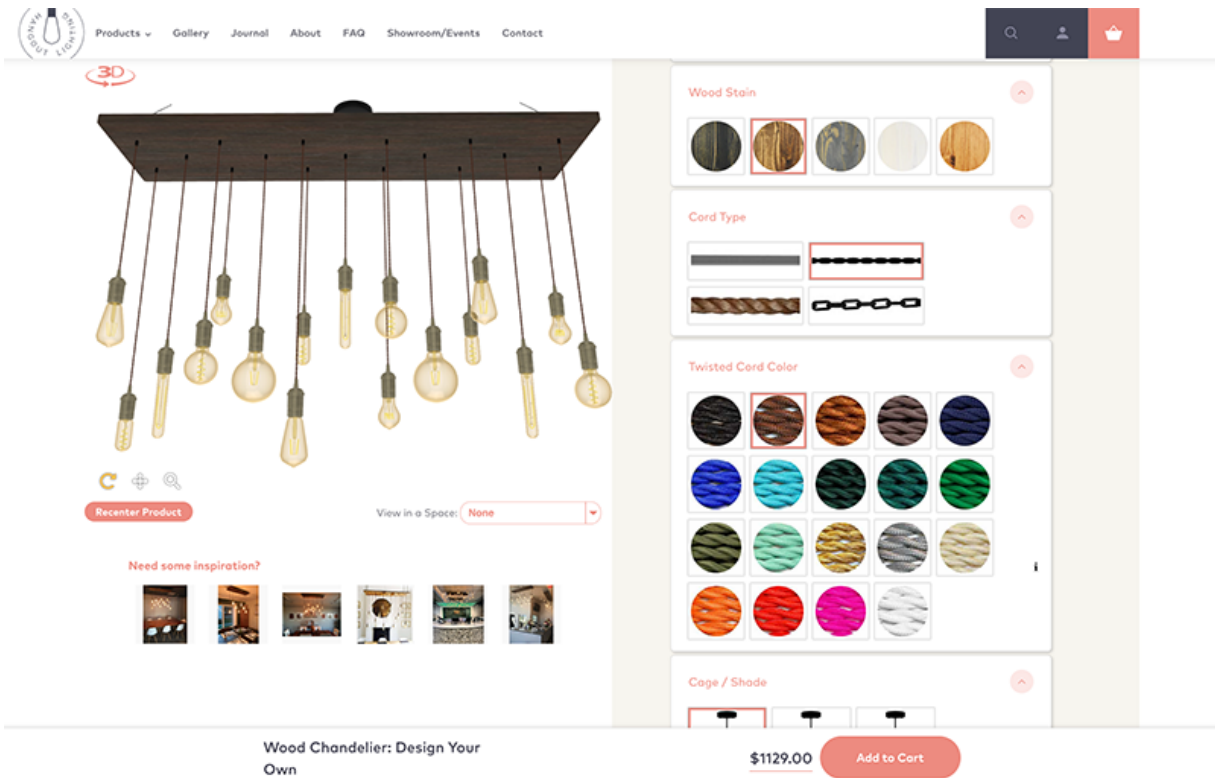
BOSTONtec.

BOSTONtec, an American brand that provides industrial workbenches and modular workstations, adopted 3D visualization to give customers a closer look at its products. The brand converted 80% of its product catalog into 3D models, helping both retail and B2B buyers engage more deeply and increasing conversion rates.

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Hangout Lighting.

Hangout Lighting, a lighting specialist with a large product catalog, implemented 3D product configuration to showcase its offerings. By creating 3D models of 90,000 products, the brand allowed customers to build personalized lighting solutions for their spaces in an interactive and intuitive way.

How to integrate 3D product visualization into your store

Before choosing a 3D product configurator, you need a clear plan to ensure the cost and effort of implementation align with your business goals. Here's how to get started.

1. Set clear objectives.

Start by defining what you want to achieve by integrating a 3D product configurator. Your goals might include increasing engagement, boosting average time on site, lowering bounce rates, reducing returns or exchanges, or improving customer satisfaction. Based on the results, you can decide whether to expand the number of products showcased with 3D visualization.

2. Choose your product range.

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Choose the products that are best suited for a 3D configurator. Set criteria such as the number of configurable attributes, like material, size, color, or parts, or identify products that customers are most likely to customize. This approach helps reduce the cost of producing photographed images for every possible variant.

Next, focus on details such as dimensions, size specifications, materials, and texture to ensure the 3D models accurately represent your products. The more realistic the visuals, the more confident your customers will feel when making a purchase.

3. 3D modeling.

As you move into the 3D modeling phase, focus on creating visuals that accurately reflect your products. Pay close attention to dimensions, materials, textures, designs, and lighting to ensure the models resemble how the products appear in real-world settings. Select your 3D model type and file formats based on your product portfolio.

Commonly used file formats include .GLB, .GLTF, .USDZ, .FBX, and .OBJ. Among these, .GLB is the preferred format for ecommerce stores because it effectively showcases details such as texture, material, and color. It also offers a technical advantage by rendering faster and delivering a smoother user experience in product configurators.

4. Technologies and tools.

Successfully building, integrating, rendering, and managing a 3D product configurator in your ecommerce store requires a combination of technologies, tools, and platforms.

To create 3D models, you can use open-source tools like Blender, which supports formats such as .GLB, .FBX, and .USDZ, or opt for premium tools like 3ds Max, which supports .FBX, .GLTF, and .USD. Tools like Adobe Aero and Substance Painter help create AR-ready 3D models with detailed textures for products like metals, clothing, and more.

To embed 3D models into your store, consider using JavaScript libraries such as Three.js and Babylon.js, or platforms like Google's Model Viewer and Sketchfab. These tools enable seamless integration and rendering of 3D models across websites and mobile applications.

5. Choosing the right 3D configurator and ecommerce platform.

Before you choose a 3D configurator, consider the following factors:

Customizability.

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The product configurator you choose should be flexible enough to support customization and adapt to the specific needs of your product portfolio.

User-friendly interface.

Make sure the interface is simple enough for customers to configure and examine products, and for backend administrators to easily upload and manage the items displayed in the configurator.

Real-time rendering.

Your product configurator should support high-quality images and 3D models. Be sure to test its real-time rendering capabilities, as smooth performance plays a key role in delivering a positive customer experience.

Integration.

Look for a product configurator that offers strong integration capabilities. It should seamlessly connect with your existing ecommerce system. Also, ensure the platform supports optimization for mobile devices to deliver a smooth, consistent experience across all screens.

Ecommerce platform.

Platform choice also plays a key role in supporting features like 3D product visualization. Platforms such as BigCommerce can integrate advanced 3D visualization tools and configurators like Sketchfab and Expivi. To better understand the cost and implementation timeline, consider consulting an official [BigCommerce partner agency](#).

Sketchfab is a powerful product visualization tool used by leading brands including Nike, Audi, BMW, and Zodiac. Expivi, meanwhile, powers 3D product customization for brands like Crocs and Kimberly-Clark.

The final word

A 3D product configurator can positively influence three critical factors that shape your brand's success: conversions, customer experience, and customer satisfaction.

It can serve as a clear differentiator, helping your brand stand out from the competition. By enhancing the product page with interactive features and highly detailed visuals, it enables customers to make confident, informed purchase decisions that are less likely to result in returns.

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The 3D rendering market is growing rapidly, with a projected value of [\\$23.78 billion by 2034](#). The market is expected to grow at a compound annual growth rate of [25%](#) between 2024 and 2032.

This growth is driven by shifting consumer expectations, increasing demand for high-quality visuals, and the pressure on brands to deliver unique, engaging experiences.

As 3D libraries and rendering technologies advance, and as ecommerce platforms continue to improve support, product visualization is on track to become standard in B2C ecommerce.

If your store runs on BigCommerce, you can take advantage of its compatibility with leading 3D product configurators. Work with an [official BigCommerce Development Services partner](#) to integrate these tools and create a more dynamic shopping experience.

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