



# Advanced Prototyping for Next Generation Product Development





## Are you looking to be the **market leader in product development?**

If so, 3D printing could be your answer. With such a diverse range of material options available, 3D printing opens new possibilities in terms of product development at all stages, from concept to final prototype. From small parts with intricate details previously unattainable with traditional manufacturing methods, to much larger parts, advanced prototyping with 3D printing produces better results – all while reducing costs!

In this eBook we'll cover how to get started with advanced prototyping and the key benefits to using 3D printing technology to take design from concept to production. So, if you're eager to learn more about unlocking the power of advanced prototype engineering in order to drive your product development plans forward – [read on!](#)

# Why 3D Printing?

As product designers, engineers and manufacturers strive to create better products faster and more efficiently, advanced prototyping with 3D printing has become a cornerstone of modern product development. 3D printing offers numerous advantages over traditional prototyping methods, including greater flexibility, improved accuracy and faster turnaround times, at all stages of the product development cycle. Read on for more details of how 3D printing is revolutionizing the design, engineering and production stages of the product development cycle:



## Design

3D printing is revolutionizing the way we design products, as well as streamlining the production process. With 3D printing, designers have access to fast, high-fidelity models that can be used to quickly test ideas, proof of concept and prototypes during the development stages.

## Engineering

3D printing is revolutionizing the way we engineer products, enabling us to design multi-material, functional and large models from a range of materials and providing engineers with faster prototyping cycles, enabling them to quickly test ideas and receive feedback on early designs.

## Production

3D printing is revolutionizing the way we create products, providing manufacturers with fast and affordable production capabilities. 3D printing provides huge advantages such as faster production cycles, fewer materials wasted and greater freedom when it comes to customization.



## How does it work?

By using computer-aided design (CAD) software to create digital models of an object, the 3D printer releases successive layers of material, according to the CAD code, until the desired product is created. This digital process allows for more complex designs than those possible with traditional manufacturing methods, as well as highly customizable end products with intricate details and precision. 3D printing is a powerful tool for quick prototyping and efficient product development that is becoming increasingly popular in industries ranging from automotive engineering to medical device production.



# What are the benefits?

Additive manufacturing has enabled the entire product development lifecycle—from initial concept to production—to become faster and more adaptive than ever. The potential applications are endless and here are some of the main benefits of using next generation 3D printing for your product development:

## **Speed & Efficiency**

3D printing is one of the fastest prototyping methods available today. Prototypes can be created in hours or days instead of weeks or months when using traditional methods such as machining, fabrication or casting, allowing engineers to quickly iterate on prototypes and develop new ideas at a rapid pace.

## **Cost Savings**

3D printing is often less expensive than traditional manufacturing processes due to its low setup costs and reduced lead times. By using 3D printing for prototyping purposes, companies can keep labor costs down while

altogether avoiding the costs associated with tooling for mass production runs.

## **Sustainability**

Additive manufacturing is more energy efficient compared to traditional methods. By keeping the entire product development cycle in one location, traditional supply chain costs are avoided making it an invaluable tool in the effort towards sustainable product development and mindful manufacturing.

## **Accuracy & Quality**

The unparalleled level of accuracy achieved through 3D printing makes it easier to

ensure that parts meet tight tolerances and specifications during product design and testing phases before going into production runs compared to other manufacturing processes.

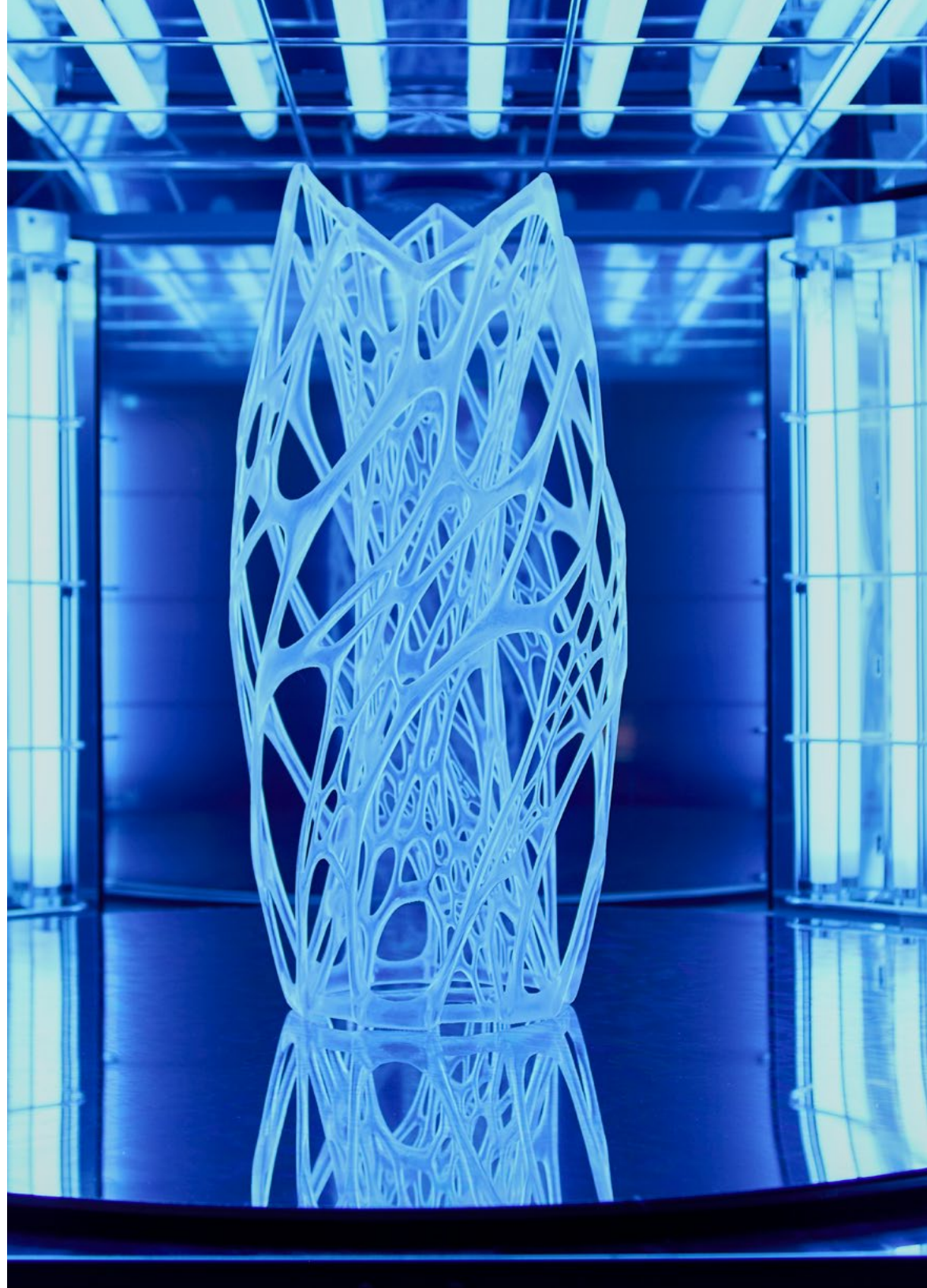
## **IP Security**

3D printing allows for greater control over your precious IP. By only printing parts in-house, companies can confidently protect their ideas and designs from potential competitors who may be tempted to copy them, allowing brands to put more focus on innovation.



## Types of materials available

The materials used in 3D printing can vary, depending on the desired application. Generally, 3D-printed parts are made from thermoplastic polymers. More specialized materials like photopolymers and resins have become increasingly popular for prototyping applications. Composite materials can be used to create parts which exhibit enhanced properties such as increased strength and stiffness. [Read more.](#)





# What the professionals are saying



PepsiCo redesigned their 2-liter bottle using PolyJet technology and the Stratasys J55 Prime 3D printer. According to Max Rodriguez, Sr. Manager R&D - Global Packaging & Engineering at PepsiCo, "From a cost savings perspective, typical tooling costs range between \$5-10K, depending on the complexity of the mold. By utilizing the Stratasys J55, we reduced that to less than \$1000."

[Read more](#)

Team Penske used stereolithography technology to rapidly print scale model components for aerodynamic testing with Stratasys Neo@800 3D printer. According to Andrew Miller, Composite Design Engineer, "Over the past six months we have significantly reduced our time and cost to get new components to the racetrack, particularly composite components."

[Read more](#)



# Wrapping Up Advanced Rapid Prototyping

3D printing has revolutionized product development for consumer goods companies due to the power of advanced rapid prototyping. Advancements in 3D printing technology have enabled companies to produce high-quality prototypes quickly and cost-effectively, for a next generation product development lifecycle from initial concept right through to production.

Next generation 3D printing allows industry leaders to bring innovative products to market faster by eliminating costly delays associated with traditional prototyping methods. Advanced rapid prototyping gives consumer

goods companies a competitive edge and unparalleled quality and precision during the product design process, creating an optimal outcome for both the manufacturer and the consumer.

If you are interested in learning more about how your company can benefit from advanced rapid prototyping with 3D printing, contact us today. We'll be happy to discuss your product development cycle and help you take advantage of this cutting-edge technology.



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