



Be a Consumer Brand Standout

**WHEN PERCEPTION IS EVERYTHING: HOW GLOBAL PLAYERS
DIFFERENTIATE THEIR PRODUCTS WITH IMPACTFUL PACKAGING**

Every year, about 3,000 new consumer goods are launched globally. One 30-minute shopping trip exposes a consumer to more than 20,000 product choices (Keller, 2008). Discerning what product fits their needs or piques their interest depends almost entirely on if the packaging stands out in a very large crowd. In a 2015 study, 84% of consumers surveyed agreed that package designs have a significant impact on their buying behavior (Zekiri and Hasani, 2015).

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Packaging drives the way consumers experience a product, providing the right cues at the right time to prompt a sale and ensure a return buyer (S. Gangar, 2015). Successful consumer brands pull consumers in, instead of just pushing products out.

Because the look of a product's packaging is so critical to its success, the realism of the prototype during development is not only critical to determining viability, but critical to determining the product's true potential for success. Leading consumer brands pull buyers in by understanding which packaging design works best through extensive testing and sampling on true-to-life prototypes.

A MULTI-STEP PROCESS MEANS MULTIPLE BOTTLENECKS

Leaders in consumer brands understand the speed of concept development and time to market is critical to hitting market targets and milestones. This can be challenging because getting a product from idea to shelf takes several steps. Producing a consumer product and its packaging typically goes through five stages of development before manufacturing, and between 10 and 100

prototypes per development cycle. This can become a cumbersome process with high costs, multiple stakeholders and drawn-out timelines when using traditional methods.

What does a traditional development process look like? Expensive and time-consuming (see the infographic for a full breakdown).

Separate systems, technologies and outside vendors are tasked with creating realistic prototypes for each stage of the development process. On average, each stage requires prototypes that cost \$1,000 to \$1,500 to cover the cost of labor, tooling, painting, hand finishing, machining and color matching. At that rate, one product requiring 50 prototypes during the development cycle could cost almost \$75,000. Imagine what the total prototyping cost becomes when multiple products requiring multiple packaging iterations are developed during each cycle.

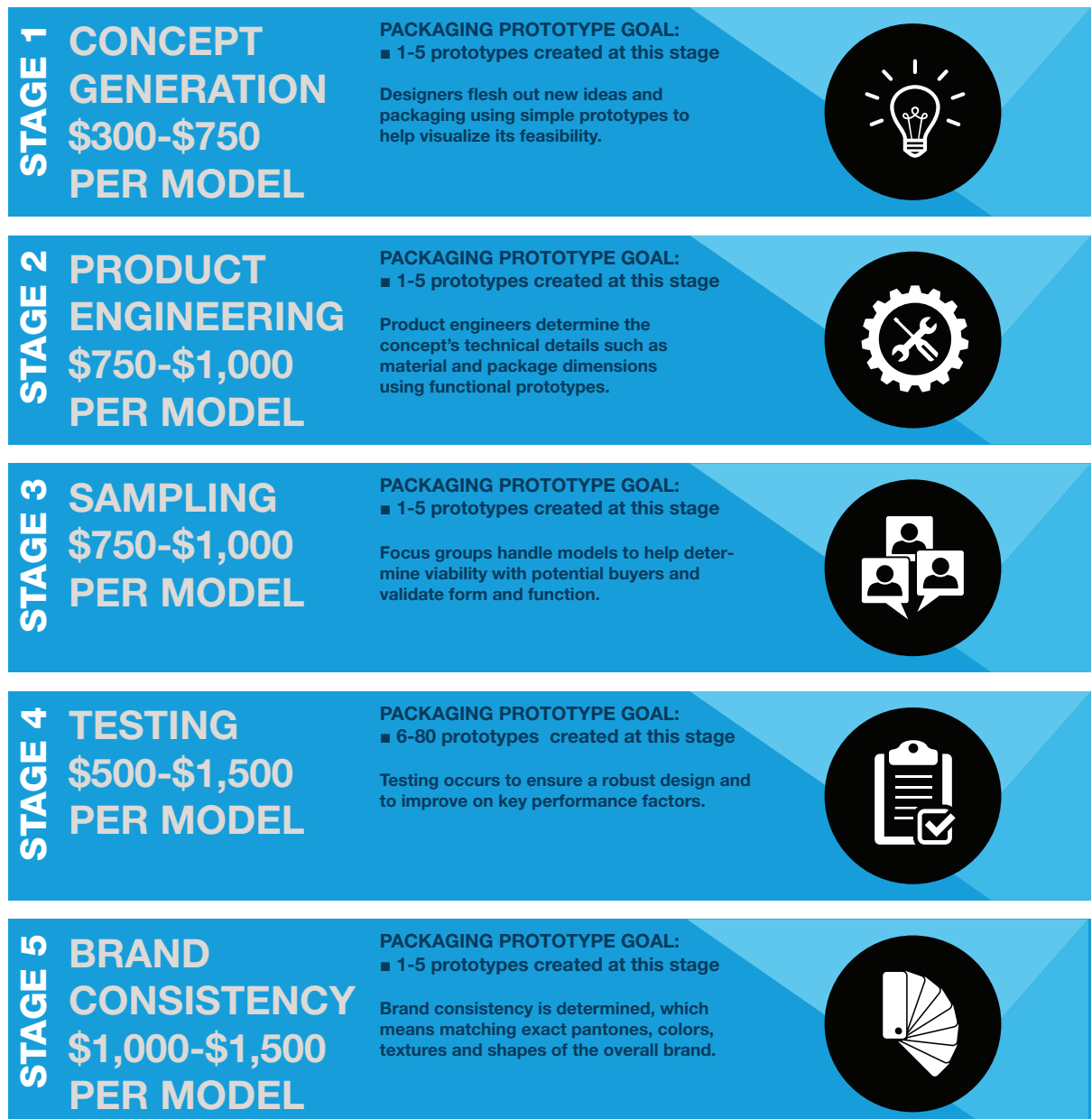


The ability to see, touch and hold realistic prototypes is a powerful communication tool in marketing and focus-group efforts.

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Consumer Goods Prototyping Process Using Traditional Methods



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For average-performing consumer brands using a combination of traditional techniques and outside vendors, this process as a whole can take up to three months, depending on how many products and stakeholders are at play, and how many design iterations are required. The sampling and brand consistency stages can take the most time, more than 55% of the entire prototyping time, and the testing stage usually requires the most prototypes due to the large number of iterations performed at this point.

Consumer brands facing endless bottlenecks and roadblocks because of multiple steps and stakeholders end up pushing out deadlines and adding to ballooning development costs, resulting in less or no time for the iterations necessary to bring a successful packaging design to life. In the end, these brands fall short of becoming a standout on the shelf.

FINDING A COMPETITIVE EDGE

Consumer brands put intense pressure on their developers and designers to make a product successful right out of the gate. There is little room for error, multiple iterations or revisions, which is why many in the fast-moving consumer goods industry look to 3D printing to improve the



3D models in full color help leading brands determine successful packaging designs fast.

process, save time and money, and make room for innovation. About 25% of companies in consumer goods have adopted 3D printing, and the number of adopters is expected to climb every year.

Leaders in the consumer goods industry understand that in order to be successful and increase sales, they must create packaging that looks great while also being practical, technically innovative and low on material waste. 3D printing gives these leading brands the speed and design freedom to determine successful packaging fast via seamless iteration cycles. More importantly, 3D printing helps top companies get to market quicker than their competitors by eliminating months from the development process.

However, not all consumer brands using 3D printing are having the same level of success. Many that have adopted 3D printing are using

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older technologies that require extra time for post-processing and refinishing, or reprinting because of reliability issues. In addition, many use 3D printed models for only a few stages of the process, like sampling or testing, because the technology they are using requires extra time they can't afford. The potential for more delays is why many use 3D models only at the end of the design cycle. When faced with inconsistencies and additional time needed for fixing, polishing or painting models made with outdated, inefficient 3D printing technologies, it is understandable why the technology is not used more.

Leading brands know it is most beneficial to use 3D models at the beginning, middle and end of a design cycle. More iterations at the start means design flaws are discovered early, and resolved with enough time to test (and test) again. Key features are validated with speed, and the design is finalized with confidence, making it a smooth transition to manufacturing. When packaging is only prototyped at the end of the cycle, there is often not enough time or money left to make the changes that will ensure success in the market.



Test concept and fit with realistic, 3D printed prototypes.

MAXIMIZE 3D PRINTING FOR EVERY STAGE

Consumer brands at the top have figured out how to make the entire workflow faster and more efficient. They're using multi-color, multi-material 3D printing at every stage of development, from ideation to testing and beyond.

Adopting leading additive technologies in advanced colors and materials means a development cycle that once relied on multiple solutions only needs one. A 3D printer with true, full-color capabilities, texture mapping and color gradients creates prototypes that look, feel and operate like finished products, without the need for painting or assembly. Leading consumer brands channel a range of applications that previously required multiple systems all in one package with an array of colors and material properties, from rigid to flexible and opaque to transparent.

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3D printed concept models can feature multiple colors, advanced textures and moving parts.

Leading 3D printers also give designers at top brands the ability to print many diverse materials in one job or part without sacrificing time for part intricacy and complexity. The versatility and reliability offers unmatched product realism.

Brand managers responsible for multiple product lines can accelerate new product development with more control over the design-to-manufacturing workflow. Product designers can better communicate the entire brand experience with vivid, realistic packaging samples, reducing the time it takes to complete each design phase with faster focus group feedback. Model makers save on manual post-processing time and costs, while packaging designers save by determining shape and material with speed and confidence

thanks to custom prototyping capabilities.

Overall, a multi-color, multi-material 3D printer shaves weeks and thousands of dollars off of the development.

Successful, global consumer brands like Unilever have hundreds of products and brands that depend on versatile 3D printing to stay competitive. With more than 400 consumer goods in home, personal care and food, Unilever needs to ensure they are competitive across the board, meeting ever-changing standards in order to differentiate themselves, which is why they use the versatile, multi-color, multi-material 3D printer, the Stratasys J750™.

With the Stratasys J750 3D Printer, leading consumer goods market leaders build in full color, advanced textures and a broad range of material properties, including transparent and rubber, making it an ideal solution for rapid prototyping fast-moving consumer goods. It maximizes uptime and the diversity of jobs that can be handled with one system, which means product developers and designers deliver realistic packaging prototypes faster, allowing for a more detailed evaluation sooner for key moments in the development process, such as client presentations, focus groups and testing.

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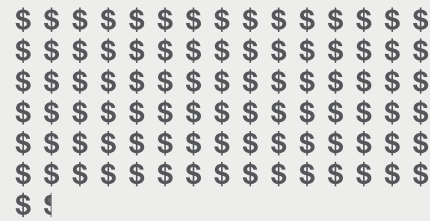
Top brands use the Stratasys J750 to produce realistic models in multiple materials and 500,000+ colors, enabling designers and engineers to validate form and function with confidence. They are creating prototypes that look, feel and operate like finished products. They can also iterate easily to improve key features and test samples with 100% color matching in less time than just one step using traditional methods. Top consumer goods companies use multi-purpose 3D printing at every stage for a more iterative design cycle with quick consumer validation, which ultimately creates a higher market adoption rate.

Unilever uses the Stratasys J750 to produce parts in the final materials for functional and consumer tests more quickly. “Before, we would have to wait several weeks to receive prototype parts using our traditional tooling process; not only did this lengthen lead times, it increased costs if iterations were required,” said Unilever R&D and Prototyping Specialist Stefano Cademartiri.

With reliable multi-color, multi-material 3D printing, top brands like Unilever accomplish every prototyping goal of the development cycle in mere hours, instead of weeks. Multiple vendors, model makers, intermediate prototypes, molding, gluing and other post-processing steps are no longer necessary.

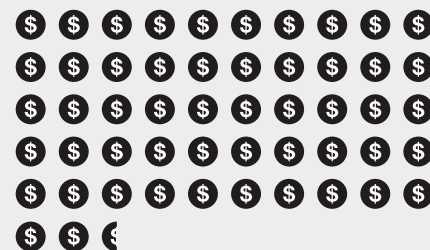
Multi-Material, Vivid Color Prototyping on the **Stratasys J750**

\$1,050 AVERAGE SAVED PER PROTOTYPE



\$ = \$100

\$52,500 AVERAGE SAVED PER PROTOTYPE CYCLE*



\$ = \$1,000

* based on a cycle that requires 50 prototypes

84% COST SAVINGS



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Market leaders already understand streamlining prototyping on an all-in-one solution also means spending \$1,000 to \$1,500 per prototype is no longer necessary. Instead, they can create prototypes for about five times less cost per model with the Stratasys J750. This means leading consumer goods companies are not only getting to market faster, but they are also saving \$40,000 to \$50,000 over traditional prototyping methods on an average product that requires 50 prototypes.

MAKE IT VIVID

The ability to 3D print multi-color prototypes is not new, but users must sacrifice either color range or part quality with other technologies. In comparison, product designers can produce smooth plastic parts in over 500,000 colors on a Stratasys J750. Every product development cycle that goes by without 3D printed prototypes in vivid color and advanced textures means lost time and revenue. Product developers can increase their speed to market thanks to workflow efficiencies made possible from reliable, repeatable and high-quality parts.

AIJU, a research lab specializing in children's toys, simplifies their product design research and



This fully functional 3D printed prototype was tested in real conditions and enabled AIJU to verify and validate the design fast.

development with full-color, multi-material 3D printed prototypes. "With our Stratasys J750, we 3D print an entire working prototype in one go with all the color specifications our customers require, while reducing the production time by 40%," said Nacho Sandoval, the head of prototyping at AIJU.

With cutting-edge additive technology an intrinsic part of their development process, AIJU meets increasing demands for realistic, complex prototypes. "The Stratasys J750 has enabled us to completely streamline prototype production from several steps to only one. Previously we had to 3D print the parts, paint them by hand and then assemble each part to obtain the final prototype. Now we can produce a full-color, multi-material prototype in one single print, transforming the economics of our entire design process," said Sandoval.

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Product developers make more informed design decisions about the product form and function by printing multiple iterations at one time in full color.

For AIJU and others producing consumer goods, the ability to change designs easily without painstaking manual work eliminates costly intermediate prototype stages that can take weeks. In addition, printing batches of prototypes lets product engineers test multiple features, designs and improvements simultaneously, eliminating time wasted when trying to perfect a client-ready presentation model one iteration at a time.

Armed with such a wide range of vivid colors and textures, top companies know they can better communicate the entire brand experience with exact color matching without the need for painting, laborious post-processing, stickers or labels. Prototypes can also be produced with the appearance of varied textures and patterns such as denim, leather, carbon fiber, fabrics and basket

weave. When various material characteristics are needed, users combine full color with a range of transparencies or different durometers.

The GrabCAD Print™ slicer on the Stratasys J750 also offers the ability to simulate glass or transparent acrylic packaging containers with advanced textures and vivid colors, ideal for consumer goods companies producing cosmetics, household cleaning products, personal care products, food or beverages. This means prototyping glassware or plastic packaging with labels, color gradients, text or images can be done in one print job. The realism of the prototype is on brand and on point, without the need for painting or stickers on the models.



The GrabCAD Print slicer on the Stratasys J750 makes it possible to simulate glass or transparent acrylic packaging containers alongside advanced textures and vivid colors.



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Albéa, a leading cosmetics and personal care packaging manufacturer, successfully adapts to a challenging and fast-moving industry with 3D printed prototypes. Albéa started with outsourcing its prototyping, commissioning suppliers who used stereolithography and laser sintering, but they couldn't improve their time-to-market using a few shades of white and grey in limited textures. The exceptional level of realism and multi-material capabilities of PolyJet means they have more creative freedom. "The choice of colors and materials we can access now has taken us into uncharted territory in terms of what we can design and supply our customers. This, along with having the technology in-house, affords us far more control and flexibility. We can offer highly accurate packaging prototypes to customers in less time, improving customer satisfaction," said Yann Crapet, Albéa project manager.

Gangar, S. (2015). Role of Packaging in Sales of FMCG Products, Nagindas Khandwala College of Commerce, Arts And Management Studies Malad (West). February 14.

Keller, Kevin L. (2008). Strategic Brand Management. New Jersey: Pearson Education

Zekiri, J., and V. V. Hasani (2015). The Role and Impact of the Packaging Effect on Consumer Buying Behaviour in Ecoforum, Vol. 4, Issue 1.

MAKE IT STAND OUT

With vivid 3D printed prototypes, consumer goods companies at the top of the market save time, meet deadlines with ease and ultimately increase business.

Brand managers fast-track new products and product designers ensure a positive brand experience using photorealistic prototypes, finalizing the best possible look and feel with speed and confidence thanks to customized prototyping capabilities of the Stratasys J750. The speed, realism and accuracy of 3D printed models enables companies, once at the middle of the pack, to gain a competitive edge. They now have the ability to iterate and refine designs through lifelike prototypes in hours instead of days for about one-fifth of the cost.

For many top global brands, employing multi-color, multi-material 3D printed prototypes across the product development is the key to rapid growth. Not only does the process help create a better product, it does so in less time and for thousands of dollars less. Many in the consumer goods industry have already adopted 3D printing to save time and money. And with multi-color, multi-material 3D printing, the potential for even more savings as well as unlimited design freedom is the key to becoming a brand that stands out on the shelf.



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THE 3D PRINTING SOLUTIONS COMPANY™

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