

Case study

HP Multi Jet Fusion 3D Printing Technology Helps LookReal Create One-of-a-Kind Personalized Toy Dolls



How HP Multi Jet Fusion Technology Enables Customization and Personalization in the Toy Industry

INDUSTRY SECTOR

Dolls and Toys

OBJECTIVE

Utilize HP's Multi Jet Fusion technology to manufacture personalized toy dolls, and in the process, build a business that could disrupt a global market that was traditionally dependent on mass manufacturing.

APPROACH

Identify the 3D printing technology with the best possible quality, highest durability and lowest cost, and then implement it as a competitive advantage.

TECHNOLOGY

HP Multi Jet Fusion
HP Jet Fusion 3D Printing Solution



Summary

IndexBox recently published a report which estimates that the global market for dolls and related toys is worth nearly \$40 billion (USD). Mass manufacturing accounts for the vast majority of sales and nearly 70% of all products in this category are produced in China.

LookReal is a doll manufacturer located in Alicante, Spain. Even though they are a startup, they have decades of experience in the art of doll making. Through research and experience, they have found that the number one reason kids play with action figures and dolls is because they see themselves reflected in them. They imagine they are the doll.

In their new venture they set a goal of creating a doll that was unique to each consumer. In the past, the technology was not available to allow this - everything was mass manufactured using injection molding and other technologies. But with the wide availability of digital photography, customers could easily supply the input. HP Multi Jet Fusion 3D Printing Technology allowed them to create the output. An affordable doll that was highly personalized.

The LookReal logo, featuring the word 'LOOKREAL' in a bold, sans-serif font. The 'O's are stylized with a green and pink circular graphic element.

Challenge

“The goal for LookReal was to create one doll for each kid with the highest possible resemblance,” said LookReal’s CEO, Philippe Joubert. “To do that, we had to go beyond painting and decoration. People have different facial features and we wanted to capture them in real life. We needed a way to produce each face independently.”

Doll parts are typically mass manufactured using injection molding. Each mold typically costs thousands of dollars and the parts often take two months or more to make. This requires significant scale. In order to be made affordably, the doll manufacturer must commit to buying thousands of each part. It also requires them to keep a significant inventory of parts on hand.

To create a personalized doll with a very close resemblance to the owner LookReal knew that they couldn’t rely on traditional manufacturing methods. The cost per doll would have been unaffordable. 3D printing offered potential, but with most technologies, the process was too slow, the product was too fragile, and the costs were too high.

Solution

“We analyzed other 3D printing technologies,” says Mr. Joubert. “It would take us eight hours to produce one doll head. There was no way we could scale at that pace. We needed to be much more productive, and we needed a solution that would allow us to meet our targeted sell price of \$99 (USD).”

LookReal began working with HP to see if their product could be manufactured using HP Multi Jet Fusion. They submitted sample designs and tested the output for durability. A “drop test” is commonly used in the doll industry to measure the durability of parts. The HP 3D High Reusability PA 12 material used in HP’s Jet Fusion 3D printers provided an incredibly high resistance. It passed all of LookReal’s drop tests, and was deemed as “unbreakable” by the company.

Next, LookReal needed to assess the quality and precision of the parts. Not only did the output match the sample designs that were supplied, but LookReal also found that there was less labor after the parts were printed. Because of the fine detail and surface finish achieved with Multi Jet Fusion, they spent less time sanding and preparing the doll faces for decoration. The material was also very receptive to paint. As an added bonus, LookReal could also print the stems that are used to hold the face in place while they are being decorated. This helped LookReal’s artists work more productively while also reducing errors.

Finally they needed to address productivity and cost. LookReal found that they could produce significantly more doll faces using HP’s Jet Fusion 3D printers. Instead of one doll every eight to ten hours, they could produce as many as 250 in the same time. Further, they could scale their business easily by simply adding more of HP’s 3D printing technology. Depending on their needs, they could add more printers, more processing stations and more trolleys and configure them in a way that optimized productivity.



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Result

“HP’s Multi Jet Fusion was the only 3D printing technology that allowed us to create personalized doll faces at a reasonably decent price,” says Mr. Joubert. It’s also helped us streamline cost and time in other aspects of our business, allowing us to be far more nimble.”

With their new HP Jet Fusion 4200 3D printer on the manufacturing floor, LookReal was able to launch their business and begin selling personalized dolls at an affordable price point.

Customers can simply take a couple of photos (front and profile view) and submit them with their order, online. In less than a week, LookReal will produce and ship the doll to a retailer or direct to the consumer.

HP’s Multi Jet Fusion technology has also helped LookReal uncover other opportunities. They’re now using their HP Jet Fusion 3D printer to make some of the molds used

for mass production. They’re also using it to make prototypes. This has helped them eliminate the need for a sculptor and saves the company a considerable amount of time and money. Parts that used to cost thousands of dollars can now be made very inexpensively and considerably more quickly.

Going forward, LookReal has significant plans to expand their business. In addition to growing their fleet of HP Jet Fusion 3D printers, the company also has plans to expand internationally, opening new production centers in other key markets. The consistency of output HP Multi Jet Fusion technology provides, will play a big role in helping LookReal achieve its goals.

“In many ways 3D printing reminds me of the Internet in 1995,” says Mr. Joubert. “The future is brilliant. Opportunities abound. HP makes me feel safe in my investment and I highly recommend their 3D printing technology to others.”



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Customer at a glance

Application

3D Printing for Final Part Production

Hardware

- HP Jet Fusion 3D 4200 Printer

Accessories

- HP Jet Fusion 3D 4200 Processing Station with Fast Cooling
- HP Jet Fusion 3D Build Unit
- HP Jet Fusion 3D External Tank

Software

- HP SmartStream 3D Build Manager
- HP SmartStream 3D Command Center
- Autodesk® Netfabb® Engine for HP
- Materialise Build Processor for HP Multi Jet Fusion
- 3MF

HP services

- Next-business-day onsite support
- Next-business-day spare parts availability, thanks to HP’s global reach
- 3D printing productivity and professional services



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