



Shorten the **Product Development Cycle**

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Sung Yeol-gyu
CEO of IM Co., Ltd



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Furry and cuddly, pets are now integral members of many families. Yet, giving pets baths and drying them afterwards have always been a headache for pet owners.

Founded in 2011, IM Co. Ltd. (IM) has broken new ground and developed a multi-purpose, hands-free dryer to solve this problem. The first- and second-generation DUZ dryers were released in 2016 and 2017, and the company is poised to launch the third-generation.

Speed Is Top Priority

Because the company is competing in a new and expanding market, the speed of product development is a top priority. How fast IM can test the prototypes decides how it can better serve the customers and maintain its market leadership.

In order to accelerate the development process, IM resorted to 3D printing, which promised to transform ideas into reality in no time. However, the low-priced printer that it first purchased fell short of expectations because of the small output. When its print bed bent, IM replaced it with a larger printer. However, its part quality was so inconsistent that IM had to outsource the prototyping to Jeonbuk Technopark, a government-funded organization. In order to get high-quality parts, IM had to go through a series of complicated administrative procedures and pay considerable fees.

Eventually, Sung Yeol-gyu, CEO of IM, decided to purchase a professional 3D printer and bring the prototyping process back in-house.



Professional Means Reliable

At the recommendation of a researcher at Jeonbuk Technopark, IM considered the Stratasys F120™, the latest addition to its award-winning F123™ Series. A plug-and-play printer, the F120 not only provides industrial quality (with a deviation smaller than 0.2 mm), but also prints two to three times faster than IM's previous printers. The accompanying GrabCAD Print™ software simplifies the entire 3D printing process with an intuitive CAD-like application, and features like detailed reporting and remote monitoring allow the team to manage the print jobs from outside the office.

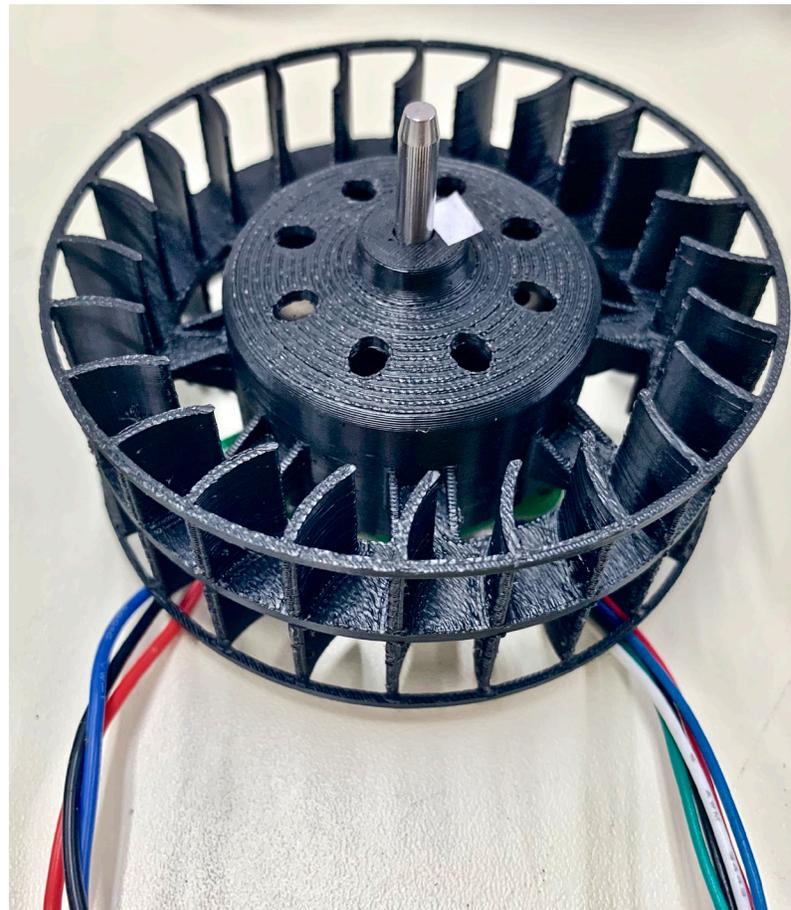
Sung Yeol-gyu sent the prototype files to Stratasys' Korean office to check the quality of the benchmarks. To his delight, the benchmarks were consistently accurate in three rounds. "We made the decision in a flash," said Sung Yeol-gyu.

Amazing Results

The F120 has played an essential role in the development of the third-generation DUZ dryer. Iteration has always been a challenging task. The complex structure of the dryer means that the product must be modified multiple times before release, and the whole process could cause serious delays, which translates into heavy costs. The product team now uses the F120 to print the dryer's fan blade, a core component, for form and functional testing.

"With the F120, we can now assemble parts right after the printing and if there were any problems, we can find out and make corrections on the spot," said Sung. As the prototypes can be used for functional tests, the IM team no longer needed to

do the lengthy flow simulations and can check the air volume and noise level within 12 hours. Before acquiring the F120, IM needed to spend 15 days to modify a mold by way of test injection, which itself took one week. As a result, any changes in the mold meant a delay of 1-1.5 months.

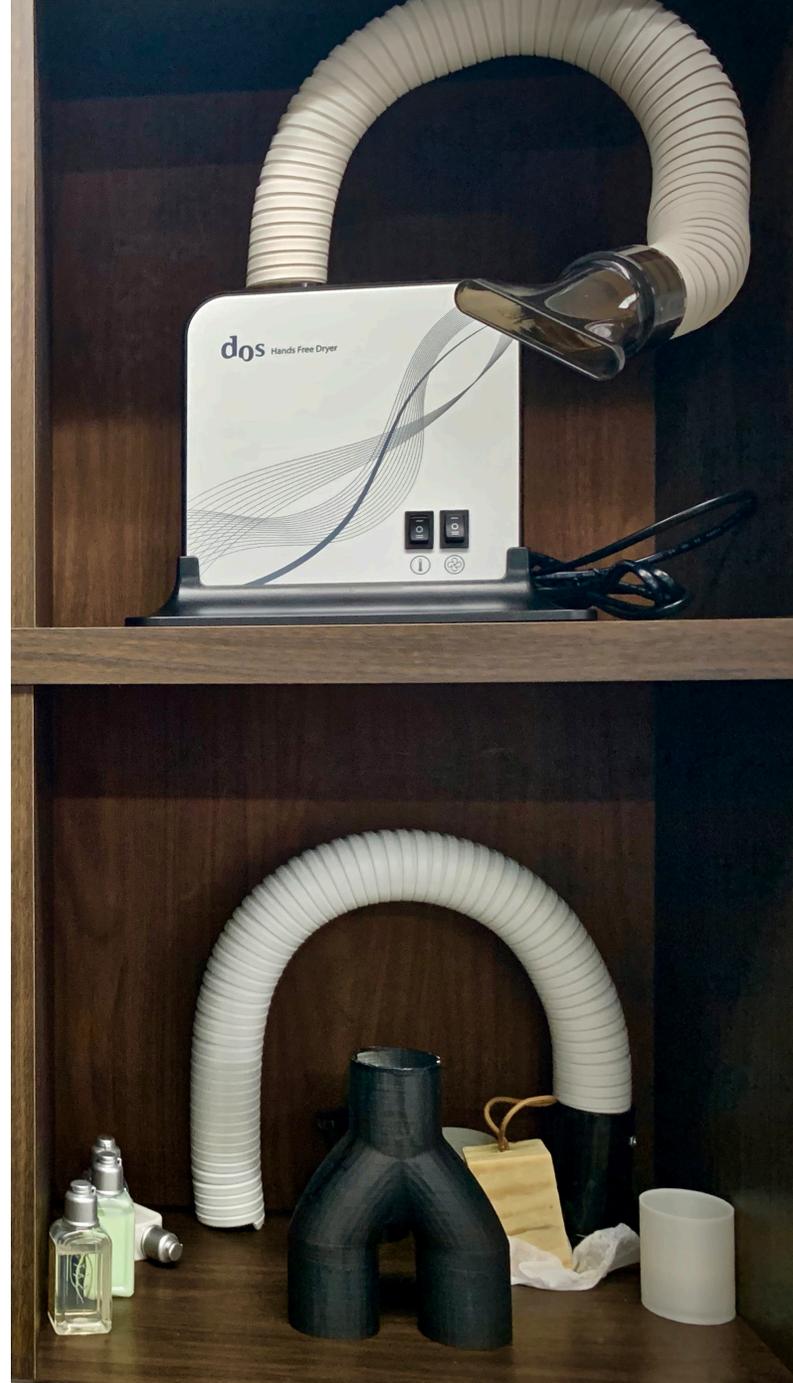


With the F120 running quietly in the office, IM shortened its entire prototype development cycle by over 67%: from three months to less than one. At the same time, the company also witnessed considerable cost savings. A test injection cost at least 1 million KRW (around \$815 USD), and a mold modification cost at least 500,000 KRW (around \$470 USD). These numbers would add up, and in-house 3D printing is much more cost-effective. “For IM, the F120 is a loyal and reliable employee that keeps creating value,” commented Sung.

Furthermore, the earlier 3D printers that IM used would need laborious post-processing. In contrast, the support material that the F120 uses is soluble; the entire process takes just two steps: dropping the parts into the tank and removing them when the support material is dissolved. This leads to significant savings in time and labor.

Embracing 3D Printing...More

At this moment, the F120 has become an indispensable part of IM’s product development cycle, and the prototypes it prints out help the engineering team perform functional tests with speed and efficiency. But IM is about to take another step to fully enjoy the benefits that 3D printing brings. Sung is thinking about introducing a Stratasys PolyJet™ 3D printer, which is known for its full-color capability and hyperrealistic parts, perfect for design verification.



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