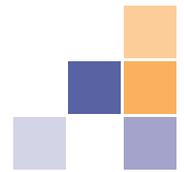




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## EnvisionTEC Technology Helps Nascent Objects Become the “Killer App” for 3D Printing

San Carlos, CA and Dearborn, MI, February 10th, 2016. At the recent CES show in Las Vegas a young startup called Nascent Objects presented their vision (and their first product, Dropller) for modular devices made possible by 3D printing and 3D printed electronics.

As featured in the Indiegogo campaign, at the time of commercial launch, Nascent Objects products are bundled into packages that transform the Dropller water monitor into a streaming wifi speaker or wifi security camera. Many of these parts will be made with 3D printing and 3D printed electronics, most of them were designed and prototyped on an EnvisionTEC 3SP® 3D printer.



“3D printing is a means to an end,” says Baback Elmieh, Nascent Objects CEO. “We have developed very innovative 3D printing intellectual property but we are not a 3D printing company, in the sense of someone that sets out to 3D print prototypes or parts. What we set out to do is make consumer electronics into a system that is sustainable, reusable, and able to really overcome the barriers to building a consumer electronics product. 3D printing just happened to be the best way to get that done.”

Nascent Objects looked at about 600 well-known consumer electronic products and found that 15 total electronic modules could build over 80% of them, which means that we use many almost identical products in a different “packaging”. “The issue is always manufacturing,” Baback explains, “Because you have to build them separately, you can’t just turn one product into another. So we built a system where the last gadget that you’ll ever have to own is actually the components inside all your products.”

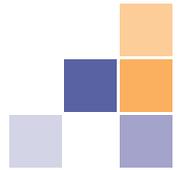
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In order to do this, the company came up with a process in which 3D printing is used to 3D print the “endostructure” (that is the chassis of each product). The core technology is a process by which Nascent can generate and metallize circuitry within 3d printed substrates and achieve very high bandwidth communication. These electrical lines, which are embedded inside 3D printed polymer parts, can carry signals up to 2Ghz and 120 Watts of power. “We print everything required to interconnect the modules. We print the mechanics, the interconnect pathways, the connector pads, everything,” says Baback. Consumers simply insert the modules into the chassis, and the product becomes immediately usable.

The EnvisionTEC systems are used primarily for prototyping purposes. The metallization technology developed by Nascent Objects is compatible with a wide range of 3D printing technologies and these include EnvisionTEC’s 3SP. “We needed very high precision in order to metallize the 3d printed substrates,” Baback reveals. “EnvisionTEC offered us the best price to quality ratio, compared to other top photopolymer based 3D printer manufacturers. We wanted to make sure that our process was compatible with EnvisionTEC process and materials because our goal is to bring final costs as low as possible.”

Nascent Objects is targeting the mass market for its products much in the same way that an iPhone would. The idea is not so dissimilar, so much so that Baback refers to the endostructure of the products as physical apps, which are used to give the same core modules different capabilities.

The first three product are also doubling as field tests to identify the ideal manufacturing process for the end use items. Currently Nascent Objects has followed a mixed approach where the exterior of the “apps” are made by different process combinations. The water conservation product uses Nascent’s 3D printed chassis on the inside and traditionally manufactured

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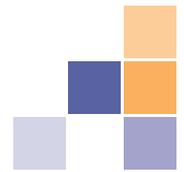
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*Baback says. "There are hundreds, if not thousands, of products that don't get made due to lack of economies of scale. Our water conservation product is a great example: it's primarily addressing a California problem but that doesn't mean it should not be built just because it addresses a niche market."*



porcelain on the outside. For the camera, it is possible to choose between a 3D printed and injection molded exterior to enclose the Nascent chassis. For the speaker, the exterior shell and the Nascent chassis are one and the same.

In general consumer are concerned with the product and not so much for the process behind it. These products need to address and solve problems. Nascent Objects makes final products that happen to have 3D printed parts inside. "One of the problem with the way electronics work today is that going into production requires too much inventory and capital risk." Baback says. "There are hundreds, if not thousands, of products that don't get made due to lack of economies of scale. Our water conservation product is a great example: it's primarily addressing a California problem but that doesn't mean it should not be built just because it addresses a niche market."



Nascent Objects addresses this issue by mass producing the electronics and custom manufacturing the apps. This will also make every object easier to repair. If large consumer electronics companies adopted a similar approach, it would become easier to fix, upgrade and customize every hardware, even appliances, with modules and shells 3D printed at home. Then 3D printers will truly become a tool for mass customization.

If you want to experience some of the same advantages, contact EnvisionTEC today to speak with a sales representative.

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