

# NTU start-up launches Singapore's first 3D printer-cum-scanner

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NTU start up launches Blacksmith Genesis 3D printer cum scanner

Nanyang Technological University's (NTU) start-up, Blacksmith Group, has launched a 3D printer that can also scan items into virtual models.

Named the Blacksmith Genesis, the device allows users without much knowledge of 3D software to scan any item, edit the scanned virtual model on the computer, and print it out in 3D with ease.

Unlike other commercial 3D printers, the Blacksmith Genesis is the first to use an innovative rotary platform for its printing and scanning. Having such a revolving platform allows for true 360 degrees scanning, while allowing it to print an item up to a size of 6,650 cm<sup>3</sup> (about 6.5 litres), equivalent to the size of a large tissue box.

This compact 3D printer-cum-scanner, slightly taller than a typical home printer, is the brainchild of Blacksmith Group's founders, NTU engineering graduate Dr Alex Pui Tze Sian and Mr Fang Kok Boon.

The company is mentored by Professor Chua Chee Kai, Director of NTU's Additive Manufacturing Centre and the world's most cited scientist in the field of 3D printing as ranked by Thomson-Reuters.

Mr Fang, CEO of Blacksmith Group, said that most 3D printers are not really useful for the average consumer, as they will not know how to design a 3D model from scratch on the computer.

"3D printing will be much easier with Blacksmith Genesis, because our users won't need to design an original work from scratch using 3D software. By scanning any physical item, the digitised object can be used as a base for them to customise or even combine with other existing models to form their own 3D object."

"As a child, I designed toys and gadgets but I didn't have a way to build them. With the advent of 3D printers today, it has opened so many possibilities for inventors in all industries including education, medicine, food, and even construction. What we hope for Blacksmith Genesis, is that it will be an empowering tool for aspiring inventors, young and old, to turn their ideas into reality."

Another unique feature of Blacksmith Genesis is its remote live monitoring and automatic error detection using an in-built camera. Users

can also monitor the printing process on their smartphone from anywhere in the world through an Internet connection, and will be able to start or stop printing at any time.

Prof Chua, the mentor for the NTU start-up, said: "3D printing is a disruptive innovation that has revolutionised the manufacturing and biomedical industries. However, it is very hard for people to operate and buy industrial-grade 3D printers which are able to print high quality 3D parts down to the smallest detail. They also usually cost from a few hundred thousand dollars to several million dollars."

"While low-cost 3D printers are accessible to the public, they are still very hard to programme and assemble. Having an affordable, high-quality 3D printer that is easy to use is what the market is missing and this is where Blacksmith Group will bridge the gap," added Prof Chua.

"Blacksmith Genesis with its unique rotary platform design is a great example of how scientists can bring innovations from the lab to the industry and in this case, all the way into consumers' homes. It has always been my wish that 3D printers will be as common as the inkjet and laser printers now found in many homes and offices. I hope having this type of creative experiences will also inspire more Singaporean students to pick up engineering as their choice of study."

The Blacksmith Group is currently incubated at NTUitive, NTU's wholly-owned subsidiary which helps NTU start-ups commercialise their innovations. The start-up is funded by the Interactive Digital Media (IDM) Jump-start and Mentor programme (i.JAM), and the National Research Foundation, Prime Minister's Office, Singapore.

## **Crowdfunding campaign launched**

For the next phase of marketing, Blacksmith Group will host a

crowdfunding campaign on Indiegogo.com for its new Blacksmith Genesis. Starting from 8.30pm (Singapore Time) today to 10 September 2014, this campaign aims to raise USD\$75,000 (S\$100,000) in pledges, which will fund the manufacturing of the new 3D printers.

Blacksmith is offering several pledge levels for its Indiegogo Campaign, with a special early adopters' price for the first few levels. Limited to only 30 units, the first tier is set at USD \$1,200 followed by USD \$1,395 for the next 20 units.

The second batch of Blacksmith Genesis with a later delivery date is limited to 50 units at the price of USD 1,595, and the next 1000 units at USD 1,795. International shipping is free to Singapore, USA, Canada as well as 24 other countries.

Turning research into innovation is one of NTU's strategic thrusts under its Five Peaks of Excellence known as Innovation Asia. The other four Peaks include Sustainable Earth, New Media, Future Healthcare and the Best of East and West.

Provided by Nanyang Technological University

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