3D printing is now for patients, not patents

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Dr Chris Sutcliffe from the University of Liverpool School of Engineering reacts to the news of a facial reconstruction carried out using 3D printing:

"The use of a combination of CT scanning and 3D printing methods to treat patients who are suffering from injury or defect is incredibly

powerful.

"As in the case of the man in Wales whose face was reconstructed using 3D printed parts, it allows expert surgeons to manipulate the precise geometry presented by the patient before the operation. In this way interventions can be designed and manufactured to fit the patient and all of this can be done in a normal, albeit slightly compressed, design timescale.

Techniques around for decades

"Let us not get too excited however as the majority of the techniques detailed in this story have been around for decades and if they were so effective at improving patient outcome they would be ubiquitous throughout the NHS.

"A very similar story to this was detailed in a BBC documentary nearly two decades ago. So why has it taken so long, why are we reading this recycled news now and what has happened to make the world interested in 3D printing?

"It is not about technology it is about money.

"The hype that currently surrounds 3D printing results from the expiry of a number of fundamental patents covering manufacturing processes. This has resulted in many low-cost 3D printing machines producing a 'print at home' community of enthusiasts, designers and innovators which has led to a wider, better served, lower cost marketplace. This in turn has created more knowledge and hence public awareness.

"On the other hand, it is also about technology and not money.

"In particular metal 3D printing, which is one of the main technologies

which we research here at Liverpool. Metal 3D printing produces components in biocompatible materials such as titanium from 3D data produced by a design system or CT scan. In the last five years these machines have improved to such an extent that they can now be used to make implantable parts.

Greater access, more experiments

"Our lab at Liverpool is one of the largest in the UK, and we have plenty of experience and many firsts. We built the first machine in the UK, helped develop alongside Renishaw the first UK manufactured metal 3D printer and invented and patented technology that has led directly to the commercial implantation of 1,000s of series-produced advanced 3D printed implants.

"Clearly the progress of 3D printing technology is accelerating, and this is largely due to more people being able to access and experiment with the devices in a variety of settings. We're likely to see a lot more stories like the facial reconstruction one in the future but for every wonder application that succeeds there are likely to be more failed ideas that never catch on."

Provided by University of Liverpool

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