Cashing in on additive manufacturing

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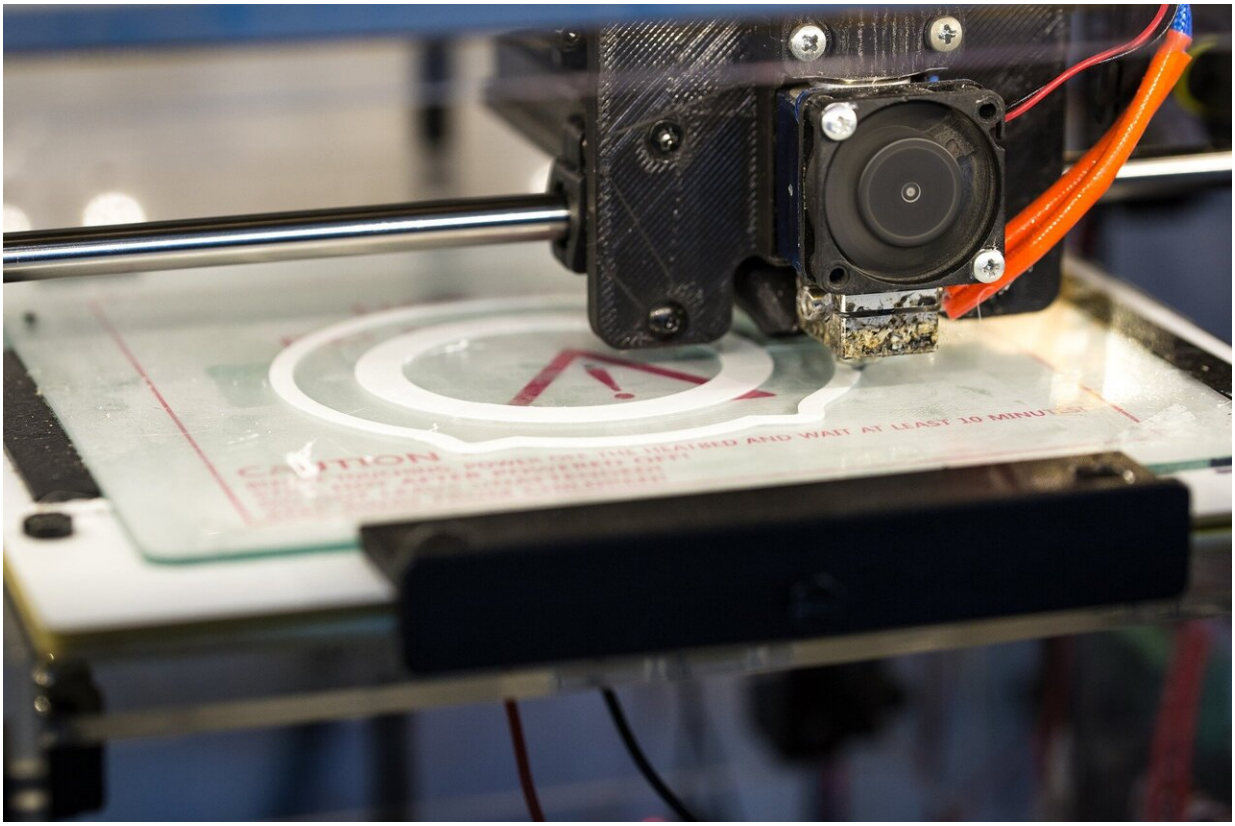

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Three-dimensional printing, 3-D printing, has developed steadily over the last three decades or so. It has become, if not commonplace, then more well-known and utilized in wide-ranging industries, it is. It has been something of a long-term technological revolution changing the way low-demand objects are designed and produced. So much so that it

is often referred to as additive manufacturing.

There is huge potential for bespoke, one-off products, replacement parts made on-demand by an agency or anyone with a 3-D printer of their own, and, of course, there is a whole new realm of artistic endeavor available through this technology.

Work published in the *International Journal of Business Innovation and Research*, reveals how designers benefit from the sharing of 3-D designs. According to Annastiina Rintala of the School of Engineering Science at Lappeenranta University of Technology in Finland, the falling costs for entry into the realm of 3-D printing is making it more readily available and as such, there is a growing demand for designs. There is even the notion, as there is with open source software, that 3-D printing represents the first steps towards the democratization of design.

"Additive manufacturing is expected to be most advantageous in market environments characterized by demand for customisation, flexibility, design complexity, and high transportation costs of the delivery of end products," explains Rintala. She has now investigated how designers might ultimately benefit financially from sharing their designs for free.

There are three environments where additive manufacturing could spawn novel industries. Firstly, in commercial markets that do not even yet exist or are too small and uncertain to attract established companies. Second, in industries where some potential users are not yet served by low-cost consumer products. And, finally, in areas where some users are not served adequately in terms of customization options. Within those areas, there are, she says, four putative strategies that might be employed: The first, where a free design simply serves as a free sample of a commercial product. The second where the design serves as an add-on for a commercial product. The third where the design serves as a sample of expert services. The fourth strategy through crowdfunding.

"This study helps to understand the linkages between hobbyism and business in the case of 3-D printing," says Rintala, it also "provides an insight into what types 3-D designs attract attention currently, and how sharing free designs could be related to their own business."

More information: Rintala, A. (2021) 'How designers benefit from free 3D design sharing', *Int. J. Business Innovation and Research*, Vol. 24, No. 1, pp.147–166.

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