

3DPRINTUK



Nick Allen, founder and chief executive



3D printed mountain bike accessories produced without set-up costs

FACTS ABOUT 3DPRINTUK

- » Founder and chief executive: Nick Allen
- » Established in 2011
- » Based in Bow, London
- » Services: 3D print on-demand service for prototype and batch production of end-user parts
- » No. of employees: 8
- » Capacity: Over 2,000 parts printed per day
- » www.3dprint-uk.co.uk

3DPRINTUK is a low volume batch production business with a state-of-the-art 3D printing facility in Bow, London. The small company – turnover is around £1 million this year and heading for £1.5 million next – has seen years of continual development into both its management of orders and its 3D printing expertise. Founder and chief executive Nick Allen explains that they are now ready to use their cutting-edge technology to take on more traditional methods of manufacture.

3D printing has been a buzzword for years but it has rarely made it into mainstream production. Instead 3D printers have been used for product development although they have been used successfully in specialised high-end markets such as medical and aerospace. At the consumer level the technology is confined to novelty trinkets being printed in the home by a select few. There are two main reasons that 3D printing has not yet revolutionised manufacturing in the UK. Firstly, it is often too expensive to create end use products, and secondly, the lack of understanding of the quality achievable from 3D printers. Our mission is to challenge both perceptions.

History

Started in a shed in 2011, my somewhat utopian aim was to bring 3D printing to the masses, allowing everyone, not just the larger businesses, to have access to additive manufacture (3D printing). As the business grew and developed so did my understanding of the capabilities of the technology. This led the company away from consumer goods towards the product development and prototyping field, serving an educated and experienced business clientele. Customers would regularly ask about

how we could improve the finish of the printed part and if they could get prices on higher volumes. Taking these two factors into consideration we developed a new pricing model over a number of years as well as bought in equipment to improve part quality. This was the beginning of our production run era.

Tackling traditional manufacturing methods with cutting-edge tech

Traditionally most plastic parts are manufactured using moulding technologies – these require expensive set-up costs for the tooling involved but produce parts at low costs once money had been invested in tooling.

Producing products additively has a number of huge advantages. Firstly, there are no tooling costs. Traditional moulding methods require tools to be made; these can cost tens of thousands of pounds. 3D printing them does not require these tools so there is no initial outlay. Secondly, there are faster lead times. For lower volumes, parts can be with you in a number of days rather than weeks or months. This means that our production gives small and micro-sized companies the opportunity to get a

part to market quickly and without going through the extremely expensive tooling costs for injection moulding.

Most 3D print bureaux struggle to keep the unit costs down as there is a lot of processing and sorting necessary after the 3D printing is done. We made it our aim to streamline our systems and order management to get things in and out the door as fast as possible. This means we can produce some parts far cheaper than our competitors and compete with the injection moulding world.

It has been our aim for many years to get into this area, but we have always struggled to keep the unit costs down as these are governed by the constraints of the technology.

After scratching our heads for a number of years, we realised that automation is the only way to do this. Step by step we began to automate each stage of the process, and every time we did that we realised that we had freed up more time to work on the next stage. Now, a year and a half on, we have doubled our turnover, yet only added one member of staff, massively diluting the overhead costs of running the business and allowing us to get our prices down, with our aim to cut them even further in the near future.

“Our production gives small and micro-sized companies the opportunity to get a part to market quickly and without going through the extremely expensive tooling cost”

Batch runs into the thousands are possible



Highly complex engineering parts can be made in low volumes much cheaper than other manufacturing technologies





One of our many state-of-the-art SLS 3D printers being started

“With our new automation systems developed in-house, in a year and a half we have doubled our turnover, yet only added one member of staff”

Challenges from growth

Brexit and the value of the pound impact us greatly, as all of our materials and equipment are bought from Germany – this has had a real impact on our manufacturing costs. We’ve taken the hit on behalf of the customer since June 2016 and kept our prices as they are, which is holding us back. Our main issue is that if we increase our prices, we become less viable as an alternative to injection moulding. New technologies are also proving a challenge. As a tech company, we are always up against it with advances in technology so need to remain ahead of the curve. In the past few years we’ve travelled the world researching emerging tech in our field, but amid the hype, we’re yet to find a process that beats our current set-up. But we need to keep on top of emerging trends.

As we grow, so do the number of printed parts that we have to sort out each day. To get these out the door as quickly as possible we need to continue to develop systems that allow us to track every part easily

from every angle of the business. Finally, as the market grows, so does the competition. With new less-experienced companies entering the market we need to count on our experience and systems to keep ahead.

Future

For us to keep ahead of our competition, there are three issues that we have highlighted as being key going forwards. Firstly, gaining accreditations. We are in the process of gaining ISO 9001 accreditation for our order and quality management to make our services more appealing.

Secondly, we want to acquire more equipment. Over the next year we’re looking to add another £250,000 of kit to increase our capacity and portfolio of finishes. Lastly, we are looking into the potential for a secondary production-only facility out of London to take advantage of cheaper rents and staffing costs. The brain of the business where all the development is achieved will remain in London to take advantage of the skill set.