According to, **Stephen Dyson**, head of Industry 4.0 at Proto Labs by embracing advanced manufacturing methods industry can still meet unprecedented aerospace demand and counter a shortage of skills.

Deals announced at the last Paris Airshow are expected to contribute £35 billion to the global economy, and £3.3bn to the UK economy alone.

These announcements are further good news for the aerospace industry, following its recent significant growth, and predictions that it is set to grow by an additional 5.1% over the next decade.

The industry has experienced cutbacks recently, however, which have raised concerns over whether aerospace manufacturing businesses are able to capitalise on this significant upturn in demand.

One of the primary causes of concern is the shortage of skilled employees currently available to the aerospace sector. Not only is there a lack of skilled workers leaving the education system, for example, but the average age of those working in the industry has increased.

According to a recent report, three in five employers (59%) within the aerospace industry are concerned that a lack of available skilled engineers could represent a threat to the future of their business. The same report revealed that a third of engineering vacancies (32%) were considered as being 'hard to fill'; around twice the national average for job vacancies. In addition, almost half of engineering businesses (48.3%) believed they had suffered delays to the development of new products, and that their operating costs had increased as a direct result of issues around recruitment.

By way of further illustration, Engineering UK's annual report suggested that, for the industry to keep up with demand, 56,000 engineering technicians will be required each year from now until 2024.

The manufacturing sector as a whole has undergone significant modernisation recently, with a range of digital manufacturing processes being introduced across many businesses. However, while some of the manpower requirements will be reduced as a result of this modernisation and the move towards digitalisation, operating these exciting new technologies will require dedicated hardware and software engineers, potentially attracting more talent to the industry.

Still evolving after three decades, 3D printing is just one of the technologies currently modernising the aerospace industry. A particularly exciting technology, it is used by developers across a range of industries for the rapid production of high-quality prototypes suitable for presentations and assembly tests. In the automotive industry, it has even been used by manufacturers to produce entire cars.

With requirements often fluctuating from business to business within the aerospace industry, 3D printing can really be of assistance by enabling manufacturers to produce anything from single components through to production-ready parts. What's more, producing 3D-printed parts can also help reduce the level of administration traditionally involved in aerospace R&D, and increase the effectiveness of a manufacturer.

Indeed, aeronautical manufacturers have already started to see tangible benefits as a result of advancements in 3D printing technology such as a reduction in material and labour costs, and support in testing small parts and components critical to the construction of engines and landing gear.

Despite the obvious potential that it offers, however, only a relatively small number of businesses are currently taking advantage of 3D printing as a production method.

Aircraft manufacturers are continuously researching ways of reducing weight, lowering emissions, and increasing cargo and cabin capacity. To achieve the growth expected of it, the industry will need to focus on those innovations that will enable a higher degree of customisation, improved longevity, and greater cost savings; all without comprising on comfort or safety.

Product developers are readily taking advantage of recent advances in rapid prototyping technology and on-demand production capabilities to make development cycles significantly smoother. At the same time, more and more businesses within the aeronautical industry are implementing digital manufacturing technologies to help them meet increasing demands for greater efficiency and innovation while having to operate within ever tighter budgets.

Embracing a range of on-demand digital manufacturing technologies can reduce production time and budget which aerospace manufacturers need to achieve to meet their forecasted growth. Indeed, by fully integrating digital manufacturing into the production process, the industry will be in a stronger position its output targets today and in years to come.

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