

Abstract

Post-Covid Perspectives on the Commercial Aviation Aerospace Industry.

The aerospace industry has emerged from the global Covid pandemic with many pressing challenges ahead as the industry rethinks its structures and operating methods. During the last decade, the need for large-scale production of aircraft had overwhelmed the key players in the commercial aviation sector as they struggled to deliver to time, quality and schedule. However, the pandemic saw a rapid decline in demand with the result that many airlines cancelled or postponed orders with new aircraft parked or at an advanced stage of production. As a result of having to rapidly adapt to a downward trend in demand, the opportunity now arises for the aerospace industry for a rethink of its manufacturing processes. In particular, to adopt and enhance many of the ideas and techniques associated with the use of advanced manufacturing technologies (IoT, analytics and virtual reality) that have been applied successfully to other industries including the automotive sector. The adoption of such technologies has the potential to enable the aerospace sector to respond and adapt far more quickly to future fluctuations in demand which inevitably will be based on past trends which will recur at some point. In particular, the need for the development of any new aircraft model needs to be linked to the parallel development of its associated production facilities via the use of advanced digital design tools more effectively than has been the case in previous generations of commercial aircraft. Such a proactive approach would also place the aviation sector in a better position to create the capabilities needed for radical future aircraft designs from 2035 onwards including the use of hydrogen propulsion, that key players in the aerospace sector are now actively discussing and researching. Developing the capability to produce advanced aircraft designs will also enable the sector to better meet its sustainability targets for 2050 in line with the global move to zero emissions.