Airbus leads the world in developing new technologies and pushing the boundaries of knowledge in the aerospace industry. Nowhere is this more evident than in its design and development of the A380, the world’s largest passenger jet. Airbus is a highly complex business, employing advanced technologies and processes, some of which have been specifically developed for this project.

In such a large-scale, innovative design and manufacturing operation, much attention is paid to keeping costs under control.

Despite the challenges, the development timeline set for the A380 was very aggressive. One of the most complex parts of the aircraft is the wing assembly, an element for which Airbus UK has the design and manufacturing responsibility. The company realised early in the programme that new processes would be needed to achieve the timescales that were being called for. “We needed to radically transform our approach to the A380, and saw value in bringing in an objective external consultancy to help define and implement new ways of working,” says Iain Gray, Managing Director of Airbus UK.

IBM Business Consulting Services provided a flexible, scalable team to define and implement transformation programmes in business, financial and organisational disciplines.

The core IBM Business Consulting Services programme team includes strategic business consultants, aircraft industry specialists and project managers. This team is expanded as required by drafting in consultants and specialists who bring a complete cross-section of business and technical skills relevant to the specific problem being addressed.

“We value the partnership with IBM for its objectivity and willingness to challenge our thinking. They are an enormous think tank we can draw on,” says Gray. “The IBM Business Consulting team shares our commitment to the Airbus programmes and is highly responsive.”
We call on specialists in particular disciplines to address particular problems, and they inject pace into finding and implementing solutions using proven processes."

Designing out cost

"Initiatives from IBM Business Consulting Services help us drive cost out of design and manufacture, improve collaborative working, and transform the way we work with our many subcontractors," explains Gray. Improved collaboration with suppliers eliminated data re-entry saving €18million. The IBM team has also helped Airbus UK improve concurrent engineering, reducing lead time on the wing by 41 weeks (36% reduction).

Sometimes, initiatives originated directly from the IBM team. Airbus built complete 3D models of A380 components to analyse clash conditions in airframe systems and structure before committing to cut metal - for example to ensure that there were adequate clearances for slat and flap mechanisms on the wing and the landing gear. Such large-scale 3D modelling involves an enormous volume of number-crunching, which would normally trigger the purchase of large processors. Seeing this situation, IBM consultants introduced Airbus to the concept of GRID computing, which pools unutilised processing capacity in hundreds of distributed workstations for use with processor intensive applications. A prototype was developed and IBM has now completed the implementation of GRID technology, saving Airbus a considerable investment.

In another area of business transformation, IBM Business Consulting Services is deploying an experienced team of human resource and organisational specialists to help Airbus UK migrate from a development organisation to one undertaking large-scale serial production.

A key factor in the success of the A380 programme is educating several hundred people across Airbus UK and its many subcontractors in the new tools, processes and collaborative working. With a vast pool of resources, IBM responded very quickly to Airbus’ training needs, building and delivering tailored courses that reflect the processes and technologies defined at the strategic level.

Ongoing partnership

With design developments and performance improvement a permanent feature of any successful airliner programme, often spanning several decades, IBM provides value across the product lifecycle: “IBM has an important ongoing role in delivering performance improvements,” concludes Gray. “It is extremely valuable for us to be able to call on such an integrated team of specialists to conduct thorough analyses of problem areas and respond quickly with solutions to help us keep things on track.”

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“We value the partnership with IBM for its objectivity and willingness to challenge our thinking. They are an enormous think tank we can draw on,”

Iain Gray, Managing Director of Airbus UK.

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