Magellan speeds up on collaborative IT

This company's collaborative, company-wide information system took second place for its effect on speeding time to market and its promotion of 'right first time'

Aircraft equipment builder Magellan Aerospace (UK) has developed a collaborative system that enables its designers to work with production and suppliers all through new product development. The result is not only faster, better, more joined-up processes and faster time to market, but risk mitigation all round.

A few years ago Magellan came up with DMIR (design maturity information record) – a system for creating and disseminating knowledge and understanding. But making that work required information on configuration data – which at the time involved a huge paper trail.

Says engineering project manager Paul Nokes: "In 2004 we knew we needed to get a PLM system to support the kind of things we were doing on the Airbus A380 project for two groups [manufacturing in Wrexham and design in Bristol]. On future projects we would have to do the same thing for up to 12 design and manufacturing groups. It was this realisation that prompted us to get more computer automation."

Part of Magellan's solution came from Catia v5. "Catia v5 works very well with preliminary data," observes Nokes. "You can develop the design to completion, swap in final surfaces or specifications when they're released and rebuild the design in a couple of days."

But that was never going to be enough. "We were looking for an electronic system that could incorporate Catia v5, configure all our data to manufacture, incorporate Microsoft Project and other planning software and reconcile our push/pull working," says Nokes. "We were also looking for a single PLM solution." And that was Smarteam, chosen largely for its flexibility.

IBM worked with Magellan and other aerospace organisations to develop Smarteam templates to form a pre-configured PLM environment, since dubbed ASC. Magellan specified and tested ASC for the A380.

Early controlled release

Says Nokes: "Our part of that is the False Rear Spar, which is the component that supports Spoiler One, Spoiler Two and Flap Track Two, and there are aft ribs that connect back into the Rear Spar. We delivered all of these parts for the first prototype build... And what we were able to do was release information 'at risk' to our manufacturers so they could manufacture parts early so that we all kept within the programme."

Users across the globe can now dial-in and view the status of work packages or design stages. They can see and download released data and request more if it has reached an appropriate stage. "Whenever we respond to a request for information it is delivered with a qualification saying it is 40% complete or whatever, so that the recipient can plan and estimate risk," explains Nokes.

Most manufacturing suppliers are within the Magellan Group so access is via the internal WAN. Nevertheless, a significant part of the ASC involved IBM middleware like WebSphere for communications.

Hard benefits? "ASC is much more than just making sure that everyone is in-step," says Nokes. "We have achieved at least a 30—40% reduction in time between concept design and component delivery." And Brian Little, executive vice president of Magellan, adds: "Overall we have seen a 10—20% reduction in our engineering costs, in the first instance, and that is without really exploiting what's possible. It has allowed us to increase our profitability in the business by about 15—20%."

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Magellan Aerospace now works collaboratively on the Airbus A380 project for two groups – manufacturing in Wrexham and design in Bristol

Key Benefits

- 30—40% reduction in time between concept design and component delivery
- 10—20% reduction in engineering costs, with more to come
- 15—20% increase in profitability across the business