

From Multitasking to Synchronized Engineering

Aircraft Tier 1 supplier improves its engineering performance, delivering a major program in record time and saving over 25,000 hours per year

Client Background and Business Situation

Our client, one of the world's largest suppliers of commercial airplane assemblies and components, faced numerous challenges in the engineering and development phase. Included were the needs to:

- Reduce cycle time and improve productivity to accommodate aggressive cost and schedule bids
- Deliver full scope to reduce expediting and rework costs in manufacturing

The Multitasking Problem in Engineering

Tier 1 suppliers of commercial airplanes operate in a complex project environment.

- Many suppliers work with the original equipment manufacturer (OEM) in designing and building an aircraft. A single change in one component results in a domino effect across the ecosystem.
- The same multiplicity exists within the organization, because many departments such as Design Engineering, Stress Engineering, Process Engineering and Supply Chain have to collaborate in developing new components.

Working with Realization, the client identified the following opportunities to increase speed and efficiency.

- Engineers had multiple customers (Integrated Product Teams, Supply Chain, Manufacturing, Customer Reviews), each of them forcing the engineers to work on their tasks first. That caused the engineers to constantly switch back and forth between designs, which prolonged tasks, reduced efficiencies and hurt quality.
- When engineers multitasked, the experts also could not focus on solving one problem at a time. A vicious cycle resulted in which engineers started even more work while waiting for experts.
- The lack of full scope definition—specs coming in very small batches, and out-of-order—by the OEM increased the multitasking of engineers and experts alike.

Results

The client reduced its engineering cycle time for a major program from 21 months to 14 months and lowered labor costs by 25,000 hours.



- The first article—a prototype made by the engineering department—was typically subject to numerous refinements. When engineering was late, not only did it cascade into the manufacturing schedule, but it also led to incomplete scope. The impact was an increase in expediting costs and rework in manufacturing.

The Synchronized Maintenance Solution:

To reduce cycle time and increase the productivity of engineers, Realization implemented a synchronization system that replaced all local schedules in the company with a single set of priorities for everyone. The system includes:

- A flexible schedule to account for uncertainties in execution. The schedule keeps work priorities current and aligned across departments and levels in the organization.
- The list also batches low-priority tasks into a higher level (for example a set of drawings for an area) so that engineers as well as experts can focus on the same work and issues.
- “Full Kitting” (complete preparation of a phase) with an OEM before deploying all the resources. This solution reduces rework and waste, and has further lessened switching because there are fewer start-and-stops.
- Now that engineering can be accelerated and more complete scope can be delivered to production, expediting and rework in manufacturing have also come down.

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If doing projects 20-50% faster is vital for your organization, contact us at [+1.408.271.5100](tel:+14082715100) to get started.