



**SIKORSKY
AIRCRAFT**
and
PRIMAVERA:
Transforming
Processes
with
Earned Value
Management



PRIMAVERA[®]
Business solutions for a project-driven world

Ongoing business growth is a strategic goal for many organizations. But when your primary customer is the U.S. military, achieving that goal can be a little more complicated. Consider the case of Sikorsky Aircraft, a subsidiary of United Technologies Corp., and one of the world's largest helicopter manufacturers. With facilities in five states and headquarters in Stratford, Conn., more than half of the company's \$2.8 billion in revenues is derived from military sales. With this comes increased oversight from the U.S. Department of Defense (DoD), including strict project management control and quality regulations.

Most critical is the government's mandated adherence to Earned Value (EV), a management tool that allows both government and contractor program managers to have visibility into technical, cost and schedule performance. This visibility not only offers insight to contract performance, but also provides the necessary data points to statistically estimate probable completion costs. It ensures that cost, schedule and technical aspects of the contract are truly integrated.

Gary DeLallo, Sikorsky's manager of program planning and control for military and commercial programs, lives and breathes EV. "Our biggest business challenge is to sustain our company growth, our ongoing success, and the execution of our programs," he explains. "We have helicopters in every branch of the military. We just signed a new \$3 billion contract to develop new heavy-lift aircraft for the U.S. Marines."

EV-ERY PROJECT

The goal of EV is to demonstrate that all work is planned, budgeted and scheduled in time-phased increments, each of which must deliver value measured against technical, cost and schedule baselines. Contractors are encouraged to use integrated management control systems, which demonstrate their progress, enhance risk management, and provide customers with current information about the contract status of products.

Because of its leading role among military suppliers and with contracts that exceed the government threshold of \$50 million, Sikorsky must comply with full-criteria EV requirements, the most detailed and demanding of any EV requirement. Requiring the contractor to comply with 32 criteria, these programs are challenging to execute and come with heavy government oversight. One of the most challenging steps is to create a fully integrated, resource-loaded master schedule that details all phases and steps of helicopter design, manufacture and assembly.

Sikorsky already has one full-criteria EV program in place for its contract to upgrade and replace the fleet of U.S. Army Black Hawk helicopters. The Black Hawk "M" project will deliver new helicopters into 2025, making it a complex and lengthy EV effort. This year, the company will deploy three additional full-criteria EV programs – an exponential leap in program management responsibilities.

Sikorsky has embraced EV as its baseline for delivering value to all segments of its business – military, commercial and customer services – while striving to significantly grow its business volume. "Every project, from program planning to capital procurement to IT projects, must now be executed under our EV program. It's a cultural shift that is guiding our transformation," explains DeLallo.

GAINING CONTROL

The challenge is significant, but Sikorsky is prepared. Having recently completed an implementation of an integrated SAP enterprise solution, the company has increased control over its financials and material planning systems. Simultaneously, Sikorsky deployed Primavera as its primary scheduling tool for its EV system.

The company switched to Primavera after a particularly grueling project bid during which Sikorsky had 90 days to build an integrated master schedule with 69 major sections. However, its scheduling software at the time provided access to the schedule to only one person at a time. "We needed to have 10 to 15 people working on the schedule simultaneously to effectively meet the deadline," says DeLallo, "but the software couldn't support us." Instead, the team worked around the clock for weeks, building pieces of the schedule and combining files at the last moment. "It was brutal," he adds. "From that experience, we knew we needed to change."

"There are standard areas that we build for a proposal that describe elements of a helicopter, such as the airframe, or the avionics," he explains. "With Primavera, we can build those pieces, resource-load them, fully integrate everything, and link them. When we're ready to build a new schedule, we just plug it in and go."

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Project Controls Manager,
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After evaluating several program management solutions, Sikorsky chose Primavera because it offers true multi-user capabilities, is compatible with the company's Oracle database, and provides Web access features. In addition, says DeLallo, the product's methodology management capabilities offered huge opportunities for productivity improvements, especially for common tasks. "There are standard areas that we build for a proposal that describe elements of a helicopter, such as the airframe, or the avionics," he explains. "With Primavera, we can build those pieces, resource-load them, fully integrate everything, and link them. When we're ready to build a new schedule, we just plug it in and go."

Primavera also supported interfaces with the new SAP system as well as two other products used by Sikorsky: the wInsight reporting and analysis tool (C/S Solutions, Inc., Manhattan Beach, Calif.) and the ProPricer proposal generation tool (Executive Business Services, Temecula, Calif.). "With the help of Primavera, we wrote interfaces between Primavera and SAP, between SAP and wInsight, and between Primavera and ProPricer," says DeLallo. "These interfaces automatically integrate the master schedule with pricing. This is huge for us. It's the first time we've ever been able to do it. Now, on contract award, the price matches the integrated master schedule and we're ready to execute. The interfaces made that happen. That's where the gold is."

PROGRAM PLANNING MEETS MULTIMEDIA

Implementation was completed in October, following the conversion of all the files to Primavera. After using the solution for six months (during which the SAP project went live on January 1), Sikorsky now relies on Primavera to support the planning and scheduling for all projects. The company currently has 360 active projects in the system, each of which has from 50 to 30,000 activities, for a total of 284,000 activities managed under EV.

Approximately 70 program planning analysts, the schedulers who are Primavera experts, are responsible for building schedules for each integrated product development team. Each project, such as the Black Hawk program, is headed by a program manager. Reporting to the program managers are control account managers (CAMs), who are responsible for a specific control account and work breakdown schedule (WBS) elements. For helicopter manufacturing, WBS elements might include major sections such as the cabin, airframe, blades, or avionics system. The program planning analysts and CAMs work together to combine the schedules, analyze and report results to the program manager.

The senior vice president of Military Programs holds weekly review meetings with all program managers to review each element of their programs – both for scheduling and to ensure they meet EV requirements. In fact, Sikorsky recently built a state-of-the-art EV program control room at its headquarters in Stratford, Conn. to support this effort. Modeled on a similar room seen at the National Reconnaissance Office in Washington, D.C., the room includes seven displays in a 270-degree field of view, multimedia capabilities with real-time data, and seating for 70 participants. Data can also be displayed on participants' laptops and desktops, as well as on the Web. The facility is used to drill down to understand the actual status of each program or project, the root causes of any cost or schedule variances, and any corrective action needed to get or keep program elements on schedule and under cost.

REFOCUS ON ENGINEERING

In addition to the obvious integration benefits of linking the schedule to costing, Sikorsky has derived other value from its Primavera implementation. Worker productivity has skyrocketed. "From the amount of time people spent using the old system, and all the different files and activities that are required to be scheduled and integrated, I knew there would be a big productivity improvement," says DeLallo.

Moreover, engineers have been relieved of many routine scheduling tasks. "We have taken standard scheduling work from engineering and built it into Primavera," he says. "That means that the scheduler concentrates on building the schedule the best way possible, and the engineer can concentrate on high-value engineering tasks."

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Even members of Sikorsky's supply chain are realizing benefits from the new solution. Using Primavera's Web capabilities, customers and leading suppliers can check their progress against project schedules. Today, a few customers connect via Citrix to a secure part of Sikorsky's site, where they can be notified of production issues, potential delays and schedule changes.

In the near future, the company hopes to bring several hundred of its top customers – each of which has 10 to 20 schedule analysts – online in this way. Currently a Sikorsky team travels to customer sites to help familiarize schedulers with Primavera. "We are getting buy-in," says DeLallo. "Customers from the U.S. Army and Navy quickly realized that Primavera is a much more powerful tool than anything they've ever used for performing schedule analysis."

PLENTY OF RUNWAY AHEAD

DeLallo views Primavera as an important enabler of changes that are increasing Sikorsky's competitiveness. "We are undergoing a transformation in our proposal process, in the EV program, and in the scheduling process," he says. "With the new interfaces, we can send scheduling data back through SAP and out through our EV system. Primavera allowed us to electronically connect all of these different systems."

Having these connections enables Sikorsky to not only operate more efficiently, but also to take on new challenges. "We plan, schedule and execute from contract award through product delivery," says DeLallo. "It is truly amazing. The engineering, planning and support required to take an idea and transform it into a complex product that flies away and saves lives is just remarkable."

Things have certainly changed from the days when company founder Igor Sikorsky would simply yell across the room to get his team focused on a plan, and then execute it that afternoon. Today DeLallo and his team plan and integrate total life cycle data from all over the company and the world, which can encompass hundreds of thousands of hours over the course of a program. And, he says, "Primavera provides us with the toolset and visibility to manage and accomplish this enormous task."

Excellent support was another critical success factor for Sikorsky. "Having a company like Primavera stand behind its product was probably the biggest help to us," he adds. "We were under a lot of pressure to do EV and at the same time we were implementing two essential new systems. If I had problem, I could call Primavera to get the resources we needed to help us be successful."

Yet DeLallo says that Sikorsky is only beginning to find new ways to streamline its processes, find new efficiencies and deliver even greater earned value to its customers – with Primavera's help. "We are only scratching the surface on the power of Primavera," he says. "I don't think we've fully realized all that it can do for us yet, since we are just beginning. It is the heart and soul of the transformation for our EV and proposal process. We have a lot of runway ahead in terms of how we can use this software."

ABOUT PRIMAVERA

Primavera is a software company who provides business solutions for a project-driven world. The company helps organizations identify which projects are most important, and makes it easy for people to work collaboratively on those projects and deliver them successfully. Primavera solutions are industry specific and highly scalable, with the power to support global enterprises. Primavera solutions have ensured the success of projects collectively worth more than \$5.5 trillion, including the management of IT projects that span the globe, the complex manufacturing of high tech products, construction of the world's tallest buildings, ongoing multi-billion dollar oil discovery projects, and space exploration. For more information, visit www.primavera.com or call +1.800.423.0245.



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