

# SIKORSKY AIRCRAFT

## Parametric Cost Estimating Takes Flight with “The First Name in Helicopters”

**Challenge:** Develop fast and accurate Rough Order of Magnitude (ROM) estimates to initiate CH-53X HLR (Heavy Lift Requirement) Program feasibility studies. Compare estimates with U.S. Government budget plans. On an ongoing basis, refine estimates to fit budgets, prepare for proposal activity, and conduct CAIV (Cost as Independent Variable) analysis.

**Solution:** PRICE TruePlanning® cost estimating tools, including PRICE H (hardware), HL (hardware lifecycle), and S (software) cost models.

**Result:** PRICE cost estimating tools reduced the anticipated number of man-hours needed to generate initial CH-53X Program estimates by about two-thirds. Ongoing, PRICE tools provided capabilities to quickly iterate costs due to design changes and CAIV analyses—tasks that would require far greater effort in a more traditional, grass-roots estimating environment. In summary, PRICE tools delivered significant reductions in cost estimating resource requirements for the CH-53X program with improved accuracy and enhanced turnaround times. At the program level, the estimates developed using the PRICE tools showed good correlation with Government-generated analogy estimates. Furthermore, any discrepancies evident at the lower levels provided valuable insight into statement of work (SOW) misunderstandings between the Government and Sikorsky—a key cost driver in major new programs. Resolution of SOW issues early in the program lifecycle is a major benefit of the application of parametric estimating tools.

### Adjusting cost estimating methodology to the speed of business

Traditional cost estimating for helicopter design, manufacture, and maintenance programs at Sikorsky Aircraft requires labor and material estimates from each functional IPT (Integrated Product Team) contributor. The pricing team then applies the proper labor rates, appropriate overheads, and targeted profit margin to prepare cost estimates. The process is time consuming, is very subjective to the estimator, frequently lacks a good Basis of Estimate, and cannot be fully completed until all groups polled for estimates have responded. This grass-roots approach to cost estimating also requires a complete Bill of Materials, which is not usually available during early program planning.

Among the innovations adopted for the CH-53X HLR (Heavy Lift Requirement) Program was parametric cost estimating using PRICE Systems’ tools. Overall objectives were to improve the speed, accuracy, and substantiation of estimates from early program definition through proposal preparation stages. According to Greg Kiviat, Senior Affordability Engineer for CH-53X at Sikorsky Aircraft, “Improved accuracy and substantially more aggressive proposal deadlines mandated a fresh look at how we do estimating at Sikorsky.”

The PRICE applications, calibrated to Sikorsky experience, were used to develop fast and accurate Rough Order of Magnitude (ROM) development and production estimates to initiate the CH-53X Program feasibility studies. Early results from the PRICE software deployment have been a huge success. The CH-53X team was able to move the program from conception through pre-development phases within a timeframe that would have been impossible using other cost estimating methods. PRICE tools provided data-supported cost estimates that compared favorably with Government program estimates. The program team was also able to make design changes and receive quick feedback on the cost impact of changes. The tools also helped highlight any discrepancies between Sikorsky and the customer’s Statement of Work.

Adds Kiviat, “PRICE provided the capability to quickly see the impact of alternative configurations and schedule on costs. That is a key benefit when trying to balance cost with customer operational requirements. In addition, PRICE provides an important view of program costs over time so that planned costs can be adjusted to comply with budgets.”

## CASE STUDY



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**>> Greg Kiviat**  
Senior Affordability  
Engineer for CH-53X

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## Paradigm shift for proposal generation

The helicopter industry turns almost exclusively on major business proposals. Most require a quick and accurate response. Based on initial experiences with PRICE tools, Sikorsky has joined the growing ranks of parametric costing advocates.

“PRICE provides a complete set of tools that enables us to move closer to the goals of faster and better supported cost estimates for proposal preparation,” confirms Kiviat.

Sikorsky uses parametric cost estimating methodology to reduce costs, increase accuracies, and improve timelines of proposal activity. Several ongoing major proposals have used parametric cost estimating both to support traditional grass-roots methods and to provide the primary basis of estimate.

**More information on Sikorsky Aircraft can be found at:**

<http://www.sikorsky.com>

## CASE STUDY

### About Sikorsky Aircraft

Sikorsky Aircraft Corporation, a subsidiary of United Technologies Corporation, is a world leader in the design and manufacture of advanced helicopters for commercial, industrial, and military uses. Sikorsky helicopters occupy a prominent position in the intermediate-to-heavy range of 11,700 lb (5,300 kg) to 73,500 lb (33,000 kg) gross weight. They are used by all five branches of the United States armed forces, along with military services and commercial operators in 40 nations.

Core military production programs are based on Sikorsky S-70® aircraft, which are the U.S. Army BLACK HAWK and U.S. Navy SEAHAWK®. The Black Hawk series is used for troop assault, combat support, special operations, and medevac operations. SEAHAWK® is used for submarine hunting, missile targeting, anti-surface ship warfare, and search and rescue. H-60 derivative aircraft are fielded for a multiplicity of missions with other branches of the U.S. military. Worldwide, Black Hawk variants are deployed by 25 governments. Seahawk is the latest of four generations of Sikorsky maritime helicopters that represent nearly half of all such helicopters worldwide. Sikorsky's CH-53E™ and MH-53E™ heavy-lift aircraft are flown by the U.S. Navy and Marine Corps to transport personnel and equipment, and in anti-mine warfare missions.

Commercial/industrial products include the S-76® and S-92™, which are designed for rescue, offshore oil, hospital, and corporate use. During certification of the new S-92™ aircraft by the U.S. Federal Aviation Administration in 2002, FAA executives labeled it as “the world’s safest helicopter.”

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