Global Technology Company Adopts a Model Based Enterprise Approach for Overall PPM Optimization

SITUATION

A global technology company that designs, develops, manufactures, integrates and maintains advanced technology
systems, products and services, is a prime contractor in aeronautics, electronics, information systems, global services, and space systems.

With a vast and complex portfolio of projects, PPM improvements are a constant necessity. Realizing that new contracts will be awarded to companies that not only can design and build the needed technology, but also can do it efficiently and economically, this orgnization is incorporating a Model Based Enterprise approach throughout the entire organization. ProModel's Portfolio Simulator was chosen to be a part of this approach.

> **"Portfolio Simulator was presented at our annual conference... we discovered that we could accomplish with it in weeks what we thought would take months."**
>
> **— Senior Program Manager**

OBJECTIVES

- Improve management decision making agility and their ability to get it right the first time and achieve operational excellence and mission success with each project and each portfolio
- Understand the impact on a portfolio from variability and uncertainty in resource demand/ capacity, time lines and project costs
- Optimize the collaborative environment, critical flow and constraints across the projects in portfolios

RESULTS

This global organization was able to make better decisions faster by understanding the project and portfolio demands and priorities. They increased their confidence in their project plans, program execution and the timeliness of product delivery.

Helping to accomplish these results was their ability to develop an understanding of system links, and shared data and to provide measurable adjustments and feedback through what-if scenarios.

An interesting result of the simulation and analysis was the effect of rework, including the proportional associations due to work sequencing and task durations that resulted in options to reduce the potential for significant cost and schedule impacts.

SOLUTION

As part of their enterprise wide modeling and simulation the organization they selected Portfolio Simulator be applied to two recent projects to assess plans and support decision making toward achieving necessary program performance. Simulation accounts for process and resource variability, uncertainty and constraints, resource demands and risk factors in engineering, production, logistics and supply chain.

Portfolio Simulator and a Space Vehicle Supply Chain

In one project they used Portfolio Simulator to better manage the supply flow and life cycle costs of a space vehicle program, identifying demands and interactions, and adjusting resource cost and schedule opportunities, including supply chain and change management.

The entire program plan for an orbital flight test and crewed operations was imported into Portfolio Simulator from MS Project and Excel. What-if and if-then assessments were made to optimize the plans for facility flow sequences; tooling, crews and commodities resources and vendor and supply chain deliveries.

A comprehensive model to assess part assembly and test supply chain life cycle costs was built. They wanted to know the impact on their costs and resources due to program changes and requirements compliance, including launch schedule, vehicle configuration, supply production, and hardware re-use. This would allow them to optimize hardware delivery dates, life cycle costs, resource quantities and usage and sensitivity analysis.

Output: Delivery dates (with confidence intervals), program and mission life-cycle costs, resource demand and sensitivities as shown in charts similar to the examples below.
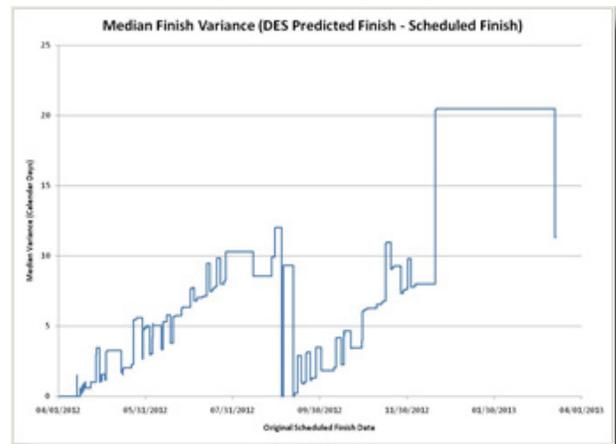
Finish Variance Report

Portfolio Simulator and the Modeling and Simulation Enterprise Strategy

Portfolio Simulator was also used for high level strategic planning to help decide what to implement with what resources, when.

The organization imported 29 strategy elements including task duration and associations, resources, and priority from a QFD (Quality Function Deployment) analysis.

Output: Cost and resource profiles; implementation time line and options as a function of resource and funding constraints as well as alternative prioritization assessments supported defining further strategy and tactical efforts. The conclusions have supported task priority and selection decisions, as well as assessing the resource emphasis to achieve the desired results.