New Biotechnology Facility Resource Optimization

SITUATION

When a large Biotechnology firm that provides time-sensitive gene and other biological testing services needed to determine resource requirements for a new site, they came to ProModel. Having experienced simulation success before, they wanted help understanding what conventional analysis could not. Just how many pieces of expensive robotics equipment would they need?

After a few days with an expert ProModel Consultant, it became clear how many $600,000 robots would be necessary.

OBJECTIVES

- Analyze and determine what resources would be needed to support reliable on-time delivery for a new facility
- Optimize these resources over the next five years

RESULTS

The simulation revealed that the client did not need to purchase the four $600,000 robots they thought would be required. This saved them $2,400,000. Also, their static analysis of resources (people and equipment) indicated that the resources were not uniformly utilized. Not until the client conducted a dynamic analysis on the ProModel platform did they see that a particular resource was overburdened. Had they executed their original static-based plan, they would have had four additional robots, yet the system would still have been sub-optimized, because of constraints on the technicians.

Based upon prior projects and the outcome of this simulation, they re-confirmed their tremendous confidence in the ProModel solution. They will be using ProModel simulation to improve the performance of 30 new and existing plants over the next several years.
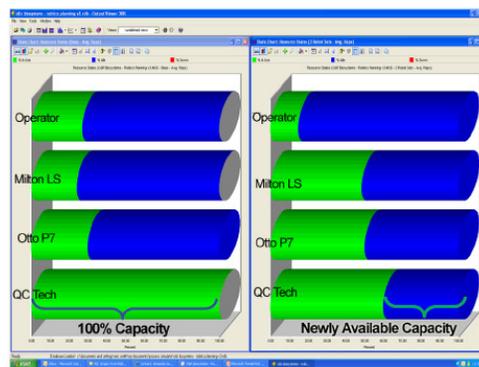
This chart shows the QC Tech is in use 100% of the time in the baseline scenario. In scenario 1 resource workloads were rebalanced for greater efficiency. This rebalancing also provided space for future QC Tech capacity.
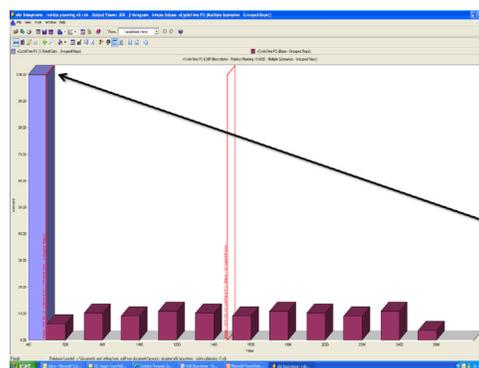
This chart validates that the higher output and reduced cycle time comes from rebalancing the human resources, not adding unnecessary robots.

SOLUTION

In a project-based training, ProModel and the client created a 12 step process map in Process Simulator, Pro-Model's Visio® plug-in. They then used this model to simulate several different scenarios. Our client applied their usual methodology based upon intuition and static analysis.

In light of the results of the fully dynamic ProModel simulation solution, the original analysis would have cost $2,400,000 and untold more in lost revenue by radically diminished production. Dynamic systems, even of the simplest nature, must be analyzed with dynamic software applications. Because the client chose to conduct the dynamic analysis, dollars were directed to resource training and away from the unnecessary robotics investment. The client was then able to take what was learned from this experience and train additional personnel on simulation technology.
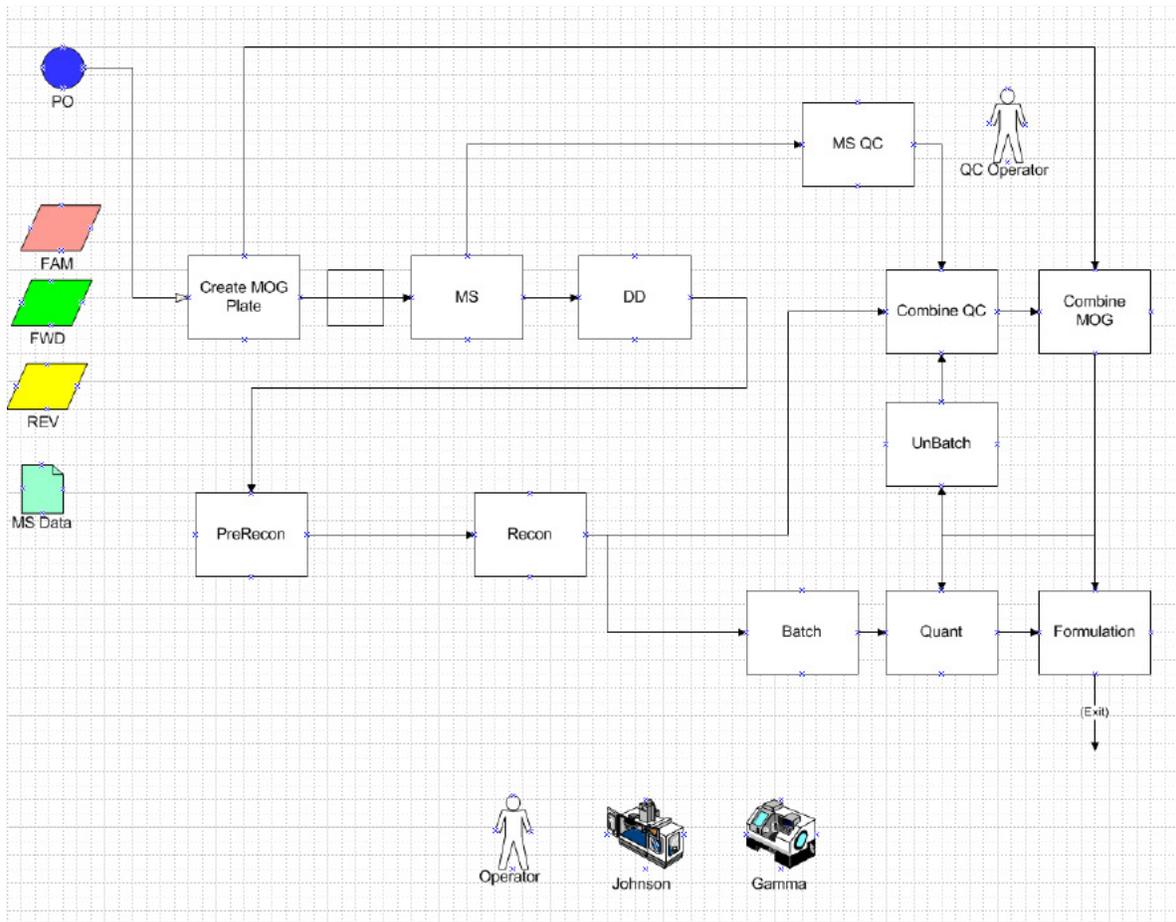
*Project-based training is an intense one-on-one custom training with a ProModel Consultant and is an excellent way to "jump-start" a specific project based on ProModel Predictive Technology. We will help you get started and take you as far as you wish to go.