



The following case study demonstrates how Six Sigma Qualtec (SSQI) reduced costs and the time required to resolve “scope trends” for a leading engineering construction firm – trends that indicate possible changes in the scope of a company’s work on a project. SSQI helped improve the company’s bottom-line and increased customer satisfaction by identifying causes of delays in trend resolution, revised functional procedures and guidelines for resolving scope trends, and trained project personnel in new procedures and guidelines.

### Reducing Cycle Times

One of the world’s largest engineering construction firms employs a unique early warning process in its Mining and Metals projects. When trends indicate that costs, schedule, and scope might deviate from initial project plans, the process alerts project management and clients. Resolving these trends quickly – possible changes to project scope – yield up-to-date and accurate information about the project’s financial status and schedule, providing both the project team and client the opportunity to base critical decisions on reliable data.

Unresolved trends consume valuable project resources and prevent project personnel from concentrating on more value-added activities. Delays in resolving trends also limit the ability to mitigate the effects of changes in cost and schedule. After a careful review, the company determined that in 60% of cases more than two weeks was required to resolve scope trends. Dissatisfied with this lengthy cycle time, the company turned to SSQI for help.

Using powerful Six Sigma tools – Process Mapping, XY Matrix evaluation, FMEA evaluation, and iGrafix process simulation – the SSQI team identified the factors that critically affected the timely resolution of project trends. These factors include the understanding of contract scope and requirements, assessments of trend requirements and constraints, communication and the prioritization of trend resolution in overall project work.

The team then developed and validated a revised process map that demonstrated how the median cycle time could be reduced to less than two weeks and that the percentage of identified trends resolved within two weeks could be increased from 40% to 75%.

To implement the new process and improvements, the SSQI team:

- Revised the guidelines for the trend program to incorporate the findings of this Six Sigma project
- Revised the Trend Log template to capture additional trend resolution data
- Improved trend estimating and schedule assessment
- Developed an annotated trend resolution process map
- Established monthly project reporting metrics and requirements
- Developed a project-by-project control chart template and instructions
- Developed a control plan for continued success

### Benefits of Trend Resolution

By reducing the median time required to resolve project trends, these improvements will free additional project hours that can be devoted to addressing project-specific issues. In addition, increasing the percentage of trends resolved within a two-week timeframe from 40% to 75% across Mining and Metals projects will yield an annualized cost savings of \$130,000. Timely trend resolution will also help reduce construction schedule impacts, reduce engineering re-work, create cost and schedule mitigation opportunities, and – most importantly for the long term – increase client satisfaction.