

THROUGHPUT IMPROVEMENT CASE STUDY

AUGUST 2013

Configure-to-Order Transformation Reduces Lead Times by More Than Two Thirds

CHALLENGE

Challenge: Redundant engineering imposes delays, increases costs

At FMC Technologies, a leading provider of subsea technologies for oil and gas exploration, engineers found themselves “reinventing the wheel” with each customer order for the company’s subsea pressure sensor. Instead of concentrating on innovation, engineers were directing a disproportionate amount of time to recreating similar designs, each with its own comprehensive batch of documentation. The redundant work was not merely tiresome: engineering each deliverable from scratch stretched lead times to an unacceptable average of twenty-nine weeks, compromising the company’s competitive position, imposing excessive costs on each product, and threatening customer satisfaction.

SOLUTION

Move from engineer-to-order to a configure-to-order workflow

Right away, the Pinnacle Strategies team recognized that time and cost overruns were symptoms of a problem that could be best addressed through one, common cure: reducing redundant, non-value-added activity. To achieve it, Pinnacle Strategies helped FMC rethink the entire process from design to delivery workflow. When Pinnacle Strategies arrived, FMC was engineering each product/project individually. But Pinnacle recognized that the overwhelming percentage of these pressure sensor designs were nearly identical; within this context of duplicated efforts, it made sense to shift from a custom, engineer-to-order process to a configure-to-order workflow that eliminated redundant efforts across two major dimensions:

ENGINEERING Pinnacle Strategies led an analysis of cross-project requirements to expose the design elements held in common by the greatest number of projects. By identifying the shared requirements, FMC engineers were able to design one baseline product that could be 95% completed, before testing and subsequent modest configuration changes, to meet the requirements of 80% of FMC’s customers. The resulting standardization created one common set of specifications that could be supplemented by a simple, one-page product data sheet accounting for the necessary custom configurations for each sensor.

DOCUMENTATION Every product document was submitted to multiple authorities for review and approval, creating an exponential decrease in efficiency as the documentation

“They are very pleased to see how standardizing the different recurring elements of the orders helped them further increase their reliability and strengthened their product offering. Being able to use their scarce engineering capacity on innovation and development helps them secure the future.”

—Christoph Lenhart, Pinnacle Strategies General Manager Europe, Middle East and Africa

CLIENT OVERVIEW

REGION

EMEA

INDUSTRY

Subsea technology for the oil and gas industry.

CUSTOMER PROFILE

FMC Technologies designs and produces technologies for the oil and gas industry.

BUSINESS SITUATION

Redundant design work delayed progress on pressure sensor completions, increasing costs and risks.

SOLUTION

Pinnacle Strategies led a process transformation from engineer-to-order to configure-to-order that dramatically reduced redundant, non-value-added activities.

RESULTS IN NUMBERS

TRIMMED DOCUMENTS FROM

45 TO 5

REDUCED ENGINEERING AND DOCUMENT REVIEW HOURS FROM

89.5 HOURS TO 11. A SAVINGS OF 78.5 HOURS/PRODUCT.

CUT LEAD TIMES BY MORE THAN 2/3.

burden rose. As a result of the configuration transformation, the number of required engineering documents shrank from an average of 45 to just five.

RESULTS

Reduced lead times by more than two thirds.

Transforming the workflow transformed work lives. Moving from engineer-to-order to configure-to-order reduced engineering design hours per project/project from sixteen to five. Document consolidation proved even more dramatic, cutting review and approval time, per project, from 73.5 hours to six hours. Overall, FMC saved nearly two weeks in engineering time per product.

Lead times, too, plummeted from a high of 38 weeks/project and an average of 29 weeks/project to a low of five to six, cutting mean lead times by more two thirds.

Less quantifiable, but just as real, have been the impacts on engineer morale. Engineers report gratitude for being liberated from repetitive tasks so that they can focus on more challenging and more interesting design opportunities.

“Made the difficult possible”

—product engineer

Further, Pinnacle’s Strategies work on the pressure sensor workflow transformation is becoming a model for other products. By capturing the essence of the analyses and execution recommendations with a new process model, FMC now has a roadmap that will allow replicating its success across multiple product lines, substantially improving its ability to reduce risk, lower costs, and increase both profitability and customer satisfaction

BEST PRACTICES SOLUTIONS

Pinnacle Strategies is an international management consulting firm focused on operations management excellence. We work with organizations to increase shareholder value by developing high-performance business processes that significantly enhance productivity, reduce costs and time to market, improving profitability and accelerating sustainable growth. Pinnacle Strategies offers results-driven consulting solutions in the areas of performance management, project management, operations management, and supply chain.

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