

STI-CO Industries, Inc.

Firm Benefits

- 67% reduction in time to develop challenging new product
- 15%-20% more time freed up to do new product design
- 200% increase in new product orders over most historic results
- Three new spin-off products were introduced within two months
- Additional high potential product was started and is rapidly moving through development

New Product Development

STI-CO Industries, Inc. (STI-CO) specializes in the design and manufacture of antenna systems for emergency, police, fire and investigative communications. Primary customers include Federal, military, state and local agencies in the U.S. and Canada. The company is especially known for its covert antennas, used in undercover operations. Their interoperable antenna simultaneously handles the multiplicity of different radio frequencies used by fire, police and emergency agencies for emergency response coordination.



Scott Crawford & John Dzikoski analyze radio transmission characteristics on STI-CO's new magnet mount roof antenna.

STI-CO is a woman-owned business, founded in 1967 with sales of approximately \$3 million annually. They employ 30 people. Product development, sales, and manufacturing are conducted at their location in Orchard Park, NY.

STI-CO competes against larger companies by developing new products which are customized to meet its customers' requirements. STI-CO is eyeing potential sales growth from new applications and new markets, but that growth is dependent on the development of new products.

Situation – “Why does it take so long to develop our products?”

For the last few years STI-CO's sales had not been growing to targeted goals. In addition, several new products on the company's development 'wish list' had not been started. The new products were intended to pursue strategic new growth markets. Products that were being developed were taking a year or longer to complete – much longer than expected. In some cases the completed products did not meet sales expectations.

The five person engineering team was hard at work on multiple projects, but the more technically difficult projects seemed to be languishing. The culture within the company was very positive, and cooperation among departments was very good. The question

“With Insyte’s help we not only completed the product in one-third the time, but we’re already getting orders based on the beta site testing we did during development.”

Kyle Swiat, Vice President

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from the leadership team was, "Why can't we turn out as many new products as we would like?" One challenge expressed by the Engineering Manager was, "It's very difficult to schedule creativity when solving challenging technical problems."

Solution — Join the engineering team, and lead changes from inside

STI-CO had successful results from several operations and quality improvement projects led by Insyte Consulting. This led company management to contact Insyte for assistance in improving their Product Development process with the goal of developing more new products faster?

The approach used by the consultant was to 'join' the STI-CO Engineering Department, initially consulting with the department manager and then as a project manager. In the role as consultant, Insyte evaluated each engineer's responsibilities and activities, reviewed the ISO documented product development procedures and reviewed all the projects in development. The consultant's goal was to free up more of the engineers' time for value-added technical development. The consultant, who had extensive experience in technical project management, was able to develop a series of recommendations for more streamlined management of the department and projects.

Once department changes were made to free up more engineering time for technical design, the consultant began leading the engineering team from start to finish on the development of a new covert antenna product. The development challenges were how to select one of the seven possible design alternatives, how to address technical feasibility issues with all the alternatives, and how to determine if the selected alternatives would be acceptable to end-users.

The consultant led the design team through a series of sessions in which the seven design alternatives were methodically compared with each other, especially in terms of technical feasibility and end user acceptance. The result was a prioritized list with a clear preference as to which design alternatives might be best in achieving their objectives.

To gauge end-user acceptance upfront, two 'quick and dirty' mockups of the preferred alternative were created in 10 days; one to test performance and the other non-working model to show alpha site end-users. Critical new insights were gathered from the testing and alpha site comments. The consultant then lead the group in week to week management of the project, providing tips and techniques for keeping the project on schedule and for overcoming obstacles.

Results — New Products Faster

The evaluation of the engineering department resulted in implementation of the following:

- Routine orders for 'new' modified standard products were delegated to a manufacturing lead person versus processing them through the engineering department.
- Certain activities previously handled by the Engineering Manger were delegated to the Senior Design Engineer to



STI-CO's Scott Crawford tests Field Portable VHF Antenna used by emergency management base stations.

free up the Manager's time for addressing the most challenging technical problems and for planning new growth products.

- Some non-engineering administrative activities handled by the engineers were transferred to an operations support group and to customer service.
- Drawing standards for modified standard products were simplified and standardized for speedier completion of documentation.
- All engineers were trained in Bill of Materials entry, product costing and AutoCAD, thereby eliminating a bottleneck in documentation completion.
- Non-value added administrative activities were eliminated or reduced.
- The result of the streamlining was to add an additional 15% to 20% to department time available for product development, as well as opening up opportunities for individuals to pursue further professional development.

As a result of the consultant leading the new covert antenna design team:

- The new covert antenna design was completed in only four months instead of what normally would have taken over 12 months (67% reduction).
- The targeted prospective customers were enthusiastic about the product because it met their performance needs and did not have installation issues that were often encountered in many competitors' products. Orders started coming in at double the rate previously experienced for similar new products.
- Three new spin-off products were developed in two months; one for military applications, one for dual frequency bands, and one for SUVs.
- The consultant and engineering team had time to begin another high potential new product.

According to Chris Goetz, Director of Engineering, "Using our new methodology we've already completed the design and brought the product to market. Using our previous process, we would still be debating which conceptual design alternative to pursue."