

# Curtis Niagara, LLC

## Firm Benefits

- 12% increase in productivity and throughput
- 26% reduction in cost of quality
- 97% of dry metal chips and majority of machining oil sent to recycling center
- Reduction in inventory costs
- Improvement in material flow
- Landed a major new project for key OEM automotive account

## Facility Consolidation

Curtis Niagara, LLC (formerly known as Curtis Screw) is a manufacturer of screw machine products. The Buffalo, NY company's primary market is OEM sales to the automotive industry, including Tier I manufacturers. Because of its automotive emphasis, Curtis Niagara is registered under TS 16949 (the current ISO 9001 standard for automotive) and ISO 14001 (environmental). The company, founded in 1905, had grown to approximately \$75 million in annual sales. Local employment was about 320 workers, including its 250 unionized production workers split between the two manufacturing facilities. The original, headquarters facility (plant 1) was comprised of approximately 92,000 square feet on three different levels, which adversely affected both logistics and material flow. The company also owned a single-level facility (plant 2) of 150,000 square feet within an older industrial park complex. Although this site presented some improvements over the original site, there were still major issues in regard to production flow and logistical limitations, particularly for shipping and receiving activities. The company also had two modern, non-union facilities in North Carolina and Connecticut which employed 100 and 50 people respectively.



View of Curtis Niagara's new 150,000 square foot state-of-the-art facility.

### Situation

The company recognized the inefficiencies related to multiple production facilities. It believed that significant cost savings and productivity improvements could be realized through a consolidation of the two Buffalo operations into a single state-of-the-art facility.

However, merely increasing productivity and reducing costs were not the only considerations of the company's senior management. It was also important that the new facility offer the opportunity to provide Curtis Niagara's customers with increased

"Insyte Consulting cost-effectively provided thorough, professional analysis and project support for this very ambitious undertaking. With their involvement we were able to meet our cost targets and time lines with minimal disruption to our business."

Paul Hojnacki, President

production capabilities as well as additional value-added products and services. The company was also committed, as seen by its ISO 14001 registration, to environmental factors, particularly recycling. Finally, there was also a strong desire to provide the workforce with a cleaner, safer and brighter working environment.

## **Solution**

The company initially approached Insyte Consulting regarding an analysis of alternatives for the consolidation of manufacturing activities into a single site. The alternatives were seen as consolidation within one of the existing local facilities, acquisition of an existing building or new construction. A joint team of Curtis Niagara and Insyte Consulting personnel was organized to evaluate the alternatives, determine an optimal solution and to subsequently plan and execute the consolidation.

The subsequent project to complete the consolidation was broken down into three primary phases. The first phase was to determine the best alternative of the choices identified above. This was addressed by value stream mapping the flows of the major product families, which represented about 80% of company sales. This activity included an analysis of product mix, both current and future, which helped determine the requirements for the consolidated facility. The information was used to help generate a basic, block diagram of what a new facility should be. This analysis quickly showed that an expansion into plant two, while feasible, did not present the best long-term solution given projected business growth and overall company needs. A new facility, whether through acquisition or construction, was determined to be the preferred alternative. This initial phase also included the identification of key external parties, who would help facilitate the consolidation. These included economic development agencies, realtors, architects and various contractors. Through this activity a modern, single-level site of 150,000 square feet was found; this facility had formerly been the manufacturing plant for another automotive parts producer (non-competitor). This site also offered the additional benefits of being located in an empire zone.

The second phase expanded the detail of the initial block layout into the selected facility. This included verification of various factors pertaining to the physical building, projected volumes by line and equipment needs/ utilization. This information provided the basis for the development and evaluation of several specific layout alternatives, which eventually resulted in the final layout. Phase two also included the construction and remodeling plan required to convert this facility to meet the company's current and future needs. The initial construction activity was begun during the final part of this phase.

The third and final phase detailed all the elements of the plant set up, including the transfer of existing equipment as well as the acquisition and installation of new equipment into the remodeled site. The staged transfer of equipment began with plant 1 and transitioned into plant 2. Ancillary activities included the installation of improved material handling equipment, i.e. three new overhead cranes. In addition, the company installed a chip recycling system of over 1,600 lineal feet. This enabled them to eliminate manual handling of the chips, recycle the majority of their machining oil and dispose of 97% of the dry metal chips to a recycling center. This is particularly significant since well over 50% of raw material eventually becomes scrap.

The overall results have been dramatic in terms of increased productivity, cost reduction, additional business opportunities, environmental improvements and employee satisfaction.

Productivity and throughput have increased based on significant improvement in machine utilization, upgrading of utilities and increased efficiencies of 12%. Material costs have been reduced due to enhanced inventory and storage practices (improved racking and supplier development). Material flow has improved through: elimination/reduction of handling and transportation, decreased congestion around docks and enhanced communication among associates. From a business development perspective, the new location facilitated landing a major project, a rack and pinion steering assembly for a key OEM automotive account.

Finally as part of the move into the new facility, the company initiated a work place organization (5S) initiative that has effectively maintained appearance, functionality and safety within the operation. These changes, combined with the above, have also contributed to a 26% reduction in cost of quality.