

# Custom Manufacturing Resource Planning Application for a Metal Manufacturing Company

## Overview

The client, one of the oldest metal manufacturing companies in the United States, had relied on a combination of paper processes and disconnected legacy systems to manage its operations. The company needed an integrated Manufacturing Resource Planning (MRP) system that would allow for efficient management of each phase of operations, while allowing maximum flexibility. Nagarro built a custom web-based system that fulfilled all the requirements, while minimizing IT investment.

## Problem Description

As a manufacturer of custom metal products for a wide variety of customers, the client had developed flexible and adaptable manufacturing processes to meet the varied specifications for each customer. Each customer order consisted of unique specifications that include chemical composition, physical dimensions and material properties. Operations were being managed using a paper based process and disconnected legacy systems that were difficult to integrate and modify. To manage its manufacturing operations efficiently, the client needed an integrated MRP system that was flexible and extendable to meet their changing

processes. After evaluating the standard commercially available ERP systems, the client concluded that in order to fulfill their requirements, massive customization was required.

## Solution

Nagarro worked with the client to develop detailed requirements and designed a secure, custom web-based MRP solution based on these requirements. The system was designed with central hub framework architecture that was highly extendable. It consisted of integrated modules that were tailored to the client's production process including integrations with equipment, PLC devices and third party applications used by the client. The specialized modules encompassed all aspects of plant operations, including receiving, inventory, manufacturing, tracking, shipping and sales. Specific functions of the system included:

- Sales: Collection of order requirements from customers. The system would decide the feasibility based on equipment specifications for both the client and its vendors
- Production Planning: Create blueprints/templates for producing each order. Individual orders require specific manufacturing operations to meet end-use of product specifications.
- Materials Requirements Planning: Material receiving, quality testing and inventory management. Actions such as suspending material lots could be taken based on

specifications of incoming material. This included interfaces with material selection systems used for production scheduling

- Hardware Management: Handle preventative maintenance of equipment used at the manufacturing plant. System can define and maintain schedules based on process cycles and process parameters.
- Shipping: Manage shipping of material from client dock to the customers using different modes of transport. Record bills obtained from carriers for accounting department.

## Benefits

- Integrated enterprise system connected sales, production planning, receiving, shipping and accounts to allow seamless transfer of data
- Improved efficiency from eliminating paper based systems
- Increased ROI by using custom tailored modules that allowed fast implementation
- Reduced overhead by replacing legacy systems that were difficult to maintain
- Minimized IT expenditure by providing a smart, affordable alternative to 'one size fits all' ERP systems