



## Improved Cost Management for Forging Company Through Activity Based Costing

# CASE STUDY

## Background

CHW Forge is a manufacturer of wide range of steel & aluminum forgings & flanges which find applications across diverse industries. It has earned a reputation for producing long lasting forgings of exceptional quality since its establishment – most of the times – Engineered to Order. Its practice of manufacturing with the best raw materials, advanced machinery, modern production techniques and testing processes adhering to international benchmarks has helped it earn the certification of a ‘Well Known Forge’ from the Central Boilers Board.

CHW Forge operations are spread across the North Indian Territory. It uses Microsoft Dynamics NAV 2013 – implemented & maintained by All e Technologies – for production & quality processes’ automation. However, its conventional costing system had some limitations, posing a number of challenges.

## Business Situation

### DIAGNOSIS & PROGNOSIS

Production at CHW was carried out in different production stages – Cutting, Forging, Heat Treatment and Machining. Output of each stage involves different levels of complexity and operational intensity which cannot be tracked using conventional costing methods. A particular job record, for example, might contain any special reworking costs in a particular production work center. Similarly, overhead allocations based on machine usage exposed problems on excessive usage, which might be the result of lengthy machine setups or break downs as well as longer than expected machine cycle times.

CHW forge realized that the focus of its cost system should shift from just financial reporting requirements to being able to provide relevant and reliable information for management decision making. With an aim of continuous improvement, the focus on minimizing costs extended from control of yields & direct labor productivity to better understanding and managing the entire business cycle. Continuous improvement initiatives were launched to address Just-In-Time, Productive Maintenance, Total Quality Control, Quick Changeover Techniques, Cycle Time, identification and elimination of Non-Value-Adding Activities. The standard cost system was unable to accurately measure and reports the true costs of these activities, and was in need of an overhaul.

The following major problems were identified in the standard costing system of CHW Forge:

1. The focus was on minimizing costs within each department. The actions taken to address cost concerns within a specific department would reduce their costs, but create additional costs in downstream departments.
2. Targets were limited to material yield and direct labor productivity. This led to other manufacturing costs & overheads being neglected; leading to loss of opportunities to control them.
3. Standard costs – that acted as benchmarks – involved provisioning for waste and non-value-adding activities. Even though meeting the standard costs largely satisfied the top management, it was far from being optimum.
4. Actual job profitability could not be tracked & measured.

## The Alletec Solution

In order to better track & understand production cost behavior, Alletec recommended that Activity-Based Costing (ABC) available in NAV 2013 be customized for Projects and implemented at CHW Forge to support its ETO processes. This ABC system was designed on the premise that products require “activities” and that these activities, in turn, consume “resources”. Under ABC, non-value-adding activities & waste are clearly highlighted and therefore better managed.

Objective of implementing Activity Based Costing was to help CHW management to track costs by cost posting in real time rather than waiting till job completion. Total visibility enables management to take timely actions towards controlling costs. Activity Based Job Costing also provides inputs for creating quotations (for jobs of similar nature) for new clients apart from helping make better sales decisions based on proposed job(s).

Implementation of ABC system at CHW forge involved the following aspects

- Analysis and design of cost center structure
- Analysis and design of the list of activities
- Determination of the cost drivers (MHR) and cost pool
- Design of products and services as the cost bearers and profitability analysis objects
- Analysis and design of Costs Allocation Model to Organizations products and services

The entire Activity Based Costing feature was implemented and made operational within 15 days with immediate realization of visible benefits. The job profitability hence calculated, incorporated Production Machine Costing, Non-Production Machine Costing, Job Order Line Wise Costing and Job Profitability.

Table I. Sample Job Profitability Calculations

| Customer Name | W.O. No. | Item No. | Qty. | Total Ch. Wt. (kg) | Total Sale Amount | Total Cost Amount  | Profit/ Loss % |
|---------------|----------|----------|------|--------------------|-------------------|--------------------|----------------|
| ABC           | E-170    | 1        | 2    | 564                | 70080             | 57808.60118        | 18%            |
| ABC           | E-170    | 2        | 2    | 932                | 114240            | 76097.23623        | 33%            |
| ABC           | E-170    | 3        | 2    | 452                | 56640             | 45971.0829         | 19%            |
| ABC           | E-170    | 4        | 1    | 719                | 84480             | 59452.52307        | 30%            |
| ABC           | E-170    | 5        | 2    | 1257               | 150240            | 104294.2215        | 31%            |
| <b>Total</b>  |          |          |      | <b>3924</b>        | <b>475680</b>     | <b>343623.6649</b> | <b>28%</b>     |

## Benefits

Implementation of Activity Based Costing in NAV 2013 brought the following benefits to CHW Forge:

- Simplified identification of inefficient products, departments and activities across the whole spectrum of business practices
- Effective resource allocation through resource concentration in more profitable jobs and resource withdrawal from less profitable jobs
- Easy identification of places where the business might be bleeding money
- Better insights into fastest growing elements of cost
- Improved project profitability through cost tracking & control
- Continuous process improvement through planning & control at process level
- Higher visibility into costly non value adding activities helping reduce waste
- Increased accuracy of project estimation and pricing decisions based on the manufacturing process
- Effective & efficient process costing mechanism
- Effective benchmarking against actual costs instead of standard costs resulting in cost optimization
- Improved decision making between in-house and outsourced job production
- Accurate determination of profit-shares across department basis the department manager's performance

## Alletec

All e Technologies (Alletec) has been a leading provider of Business Solutions & IT services to Growth Companies since 2000. A Microsoft Dynamics Gold Competency Partner – Alletec has remained the largest ERP and CRM partner for Microsoft over many years. Besides India, Alletec has been providing solutions to customers in the Middle-East, APAC, Europe, USA and Africa. Alletec has been engaged with Microsoft on product engineering and has also developed several industry solutions.

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