



Value Proposition

Recognized as thought leaders and innovators in business process improvements, Sigma Breakthrough Technologies Inc. (SBTI) is a global management consulting firm specializing in the deployment of Six Sigma and Lean methodologies. SBTI delivers innovative and sustainable business process excellence solutions by developing future leaders with core competencies to drive superior top and bottom line results. We advance our clients with best-in-class results in revenue growth, cost reduction, new product development and process improvement.

What We Provide

SBTI offers a full range of programs and services. These offerings include leadership workshops, asset maximization, strategic planning and assessments, multilevel managerial workshops and specialized “belt” training at the tactical level.

Results. Guaranteed.

SBTI delivers the fastest and highest return on investment in the industry. Always incorporating a measurement benchmark, most of our clients experience an average of 30X return on investment (ROI) within the first 24 months of engagement.

Global Resources

Throughout our history, SBTI has demonstrated a track record of quickly responding to clients’ global needs. Our international offerings are handled through regional offices in Latin America, Europe and Asia. Materials are available in English, Spanish, Italian, French, German, Mandarin, Korean and Japanese. Others in process of being translated.

Our History

Dr. Stephen Zinkgraf, one of the original Six Sigma developers, founded SBTI in 1997. Beginning with two corporate clients, SBTI has grown to more than 70 global corporate deployments and more than 220 clients using SBTI methodology.

SBTI Executive Directors and Master Consultants have a minimum of 10 years industry experience – some 25 or more. Our international offices provide the same unmatched experience and capabilities as in the states, while offering local language and bilingual instructors. All of SBTI’s consultants have lead multiple waves of training, completed numerous projects and continually mentor Black Belts.

CASE STUDY

Industry: Transportation

Client: Anonymous

Event: Kaizen Event

50 Words or Less

Using SBTI’s Discovery Event and Kaizen methods, our client was able to achieve a \$858,000 savings in parts and labor costs associated with the remanufacturing of Jackson tampers used by railroad track crews to repair portions of track throughout their rail network.

Five-day Discovery Event and Kaizen saves a major railroad \$858,000 in parts and labor

Project Background

Our client, a major railroad in the continental US, has a remanufacturing facility in the southeast responsible for rebuilding rail installation and maintenance equipment used by the road crews. This project focused on the



Jackson tamper machine. Historical data indicated an average cost of >\$300k per Jackson tamper in material costs and labor of 1500 hrs. The approved budget for 2007 would allow 12 tampers to be rebuilt. Proper staffing levels were also a question mark due to optimal manpower requirements not being known due to excessive rework and vendor quality issues. Customer (road crews) quality and dependability also needed to be improved.

Our client had a history of using additional manpower and inflated schedule to meet the demand. This led to excess cost via additional manpower and cycle time.

Discovery Mapping

Beginning with Value Stream Mapping, the team decided to Value Stream the 3 stations or “spots” used for the tamper assembly. With each map they discovered an imbalance of processing times and random railcar storages, marked as inventory, between the value added steps of their processes. The SBTI facilitators helped the client qualify the efficiency of the process by measuring the duration of time at every value added and non-value added steps in the process. What we discovered is what SBTI calls “the delay ratio” of the process. Delay ratio is defined as (total value added time) divided

by (total value added time + total non-value added time). The performance of these three tamper assembly spots had a delay ration in the 64% range. Meaning that about 36% of the time there were no value-added activities going on with a typical tamper assembly.

Analyze Phase

The investigation revealed that we did not have any standard work instructions in order to identify in detail the work to be performed at each spot! Without this information, assembly was loosely in the hands of the individual

employee. This of course led to longer build times and inflated costs.

Through employee interviews and process observation, we were able to identify not only work content at each station, but actual assembly times for the installed components. In addition, a content manual with part drawings and numbers was generated and distributed at each workstation to further assist the employees in the assembly of the tamper components. Non-value added elements were greatly reduced by generating a lost-time record. This was a repository of delay events identified by the line workers during the assembly process.

By focusing on these non-value added

activities, the business was able to quantify the cost and schedule delay of these delay events. As a result, keys suppliers were identified that were contributing to these delays due to inferior quality of purchases components. These suppliers were brought in to discuss the issues and to formulate an improvement plan.

Reducing Causes of Variation

Armed with this delay information, the suppliers in question were asked to make a visit to the rebuild facility and discuss the issues found and to formulate an appropriate corrective action. As a result of this meeting, key items were identified and discussed that directly impacted the ability of the assembly team to efficiently assemble the tamper to the budget.

After understanding the delay information and the root causes, we focused our attention on another key discovery. After identifying, measuring and documenting the standard work, we questioned the manpower requirements of the existing assembly process. By using line-leveling techniques, we were able to identify the exact number of employees we needed at each of the



three workstations. We were then able to re-deploy 3 resources to other areas of the business.

Conclusions and General Results

Using the Discovery Event® methodology, we were able to identify root-causes of variation and many non-value added steps. The tangible results of this discovery event were the identification of non-value added activities that were greatly reduced. Manpower was significantly reduced on the tamper assembly line. Standard work has become the norm. Due to the streamlined process, employees had a better understanding of job requirements and performed to budget. The team also drafted six projects or Kaizens that they believed were essential to realizing the “Discovered” opportunities on similar rebuild lines.

Specific savings deliverables from this event:

1. The tamper team was able to produce 15 tampers using the same budget
2. Reduced total hours/tamper from 1500 to 1286 average
3. Reduced total in-shop dwell by 12 days from assembly start to ship
4. Reduced total material requirements (including scrap and rework)
5. Reduced tamper headcount by three
6. Total cost savings of the above items resulted in three additional tampers at \$0 cost or \$286K x 3 = \$858K of cost avoidance
7. 90-day warranty expectations were exceeded as a result of this event.

Event started in April and was in place for units put into service in May.

