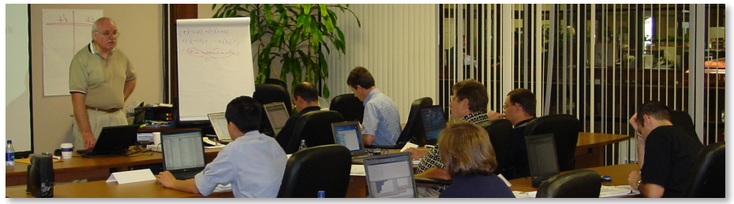
ABOUT SBTI



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.

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CASE STUDY

Industry: Chemical Manufacturing

Client: Anonymous

Event: Discovery Event℠

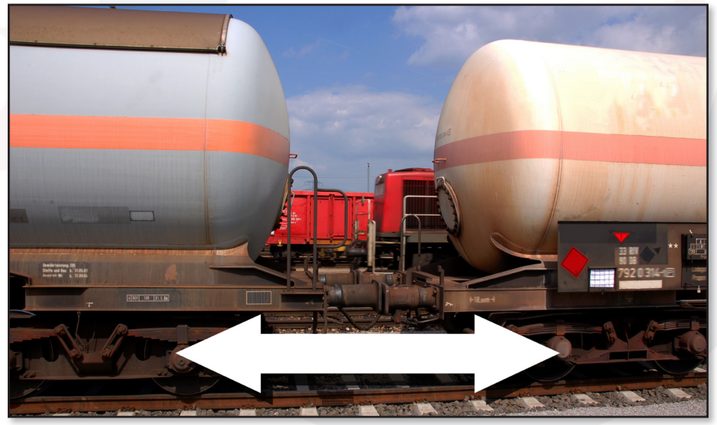
50 Words or Less

Using Discovery Event methodology, this study shows how a chemical manufacturer was able to reduce its fleet by 20%, resulting in saving $690,000 in railcar storage fees. An alternative to these fees would have resulted in a $2,000,000 CapEx project that can now be avoided and $440,000 in annual railcar lease fees saved.

Manufacturer saves $690,000 in storage fees while avoiding millions in additional projects

Project Background

A SBTI client and chemical manufacturer in Quebec Canada, had an average railcar inventory of 205 cars on site per day. Of these cars nearly 40 of them were stored on the Canadian National (CN) railroad's tracks just outside the plant.



Beginning in January of 2009, CN was going to start charging them $50 per car per day for cars that were stored on the CN tracks. In addition, the CN was going to charge $200 per car to move the cars into and another $200 per car to move them out of the CN tracks – referred to as a "switching charge".

Through the process of Discovery, our client admittedly had a history of keeping "just-in-case" (JIC) storage cars on site to ensure that the plant would never be waiting on cars, thereby avoiding shutting the plant down as a result of not having available railcars. This JIC management resulted in the current inventory of cars, approximately five days worth of cars on site at any one time.

Discovery Mapping

Beginning with Value Stream Mapping, the team decided to Value Stream the three types of railcars that were on site; Sodium Hydroxide (NaOH) Hydrochloric Acid (HCl) and Chlorine (Cl2). With each map we 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 step in the process. What we

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Acid Railcar

discovered is what SBTI calls "the delay ratio" of the process. Delay ratio equals (total value added time) divided by (total value-added time PLUS total non-value-added time). The performance of these three railcar processes had a delay ratio in the six percent range. Meaning that about 94% of the time there were no value-added activites going on with a typical railcar.

Analyze Phase

The investigation revealed that we were weighing the most common railcars 200% of the time! The initial weights of every car were validated on a second scale 100% of the time. Through statistical sampling analysis we will be able to greatly reduce the time and frequency of the entire weighing process while assuring, with a very high degree of confidence, that the railcars will be at or near optimal weights.

Non-value-added elements were greatly reduced by benchmarking intern to the corporation. Key members of various sites were brought together to assist on the analysis of the processes. At certain points during the mapping processes we were able to use these cross-site resources to validate their internal processes. This review cycle allowed the creation and sharing of internal best practices.

An immediate example of these internal best practices allowed the target site to reduce the inspection process by 67%.

Caustic Railcar

Reducing Causes of Variation

There was still something that was bothering the team. They knew that we were attacking waste and reducing non-value-added steps but there were a lot of short-notice and odd quantities of volumes being demanded by their customers. The varying horizons of lead time and fluctuations in quantities ordered would cause a significant amount of expediting and railcar shuffling in the operations. The result would be a lot of extra hours burned and inventory sitting around longer than expected while the "hot jobs" were muscled through the operation.

We decided to identify the root causes of the variation by conducting a coefficient of variation analysis for the top 35 customers. These customers would account for more than 65% of total volume shipped from the facility. The coefficient of variation analysis simply takes the standard deviation of the order size and divides by the average order size. We also conducted the same analysis of the order lead time. Any resulting numbers that approached .75 or greater were identified and labeled as "volatile". The results indicated that in some of the cases we were our own worst enemy. Shipments between plants caused much of the short-notice orders. There were also several customers whose erratic order patterns caused a "bull whip" affect inside the operations.

Conclusions and General Results

Using Discovery Event methodology, we were able to identify and eliminate root causes of variation and many non-value-added steps. The tangible results

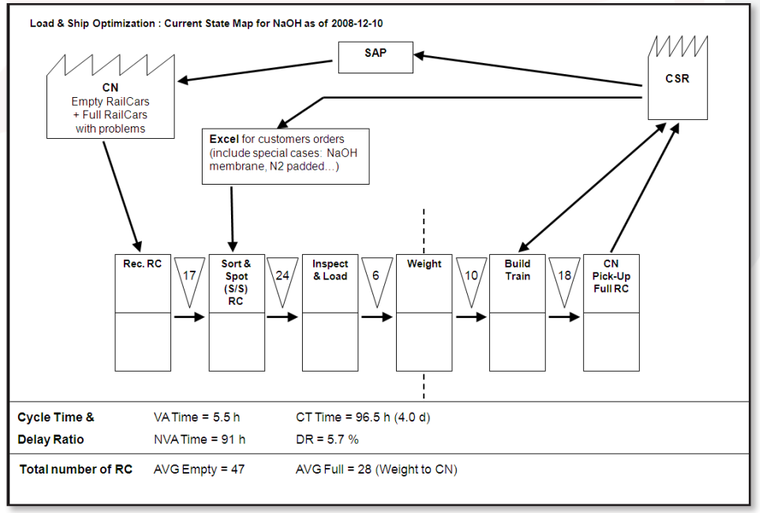
of this discovery event were the formal drafting of six projects or Kaizens that the team believed were essential to realizing the opportunities and another seven projects or Kaizens that would support continuous improvement opportunities going forward. The team is confident that through the implementation of these opportunities there are real savings that will come from the reduction of the rail fleet on site.

Specific savings opportunities are:

1. Reducing 38 railcars from the CN tracks, therefore not being charged with the daily storage fees: annual savings = $690,000
2. Reducing the fleet by 38 railcars will remove lease obligations of approximately $440,000
3. If the fleet could not be reduced, the client was prepared to build additional tracks inside the current operations at an estimated cost of $2,000,000

Supplier Alignment

The team also identified opportunities to improve the performance of their supplier. The process of discovery helped us to realize that the CN was using their locomotives to move cars into and out of our client's facility twice per day. The new processes would allow the CN to only come on site one time per day, thus reducing the time and expense of the CN routes.



Delay Ratios of Caustic Car Processes

Average Cars in Yards
- Empty - 47
- Full - 28
- Cars Shipped per Day = 18 RC

Value Added and Non-Value Added Times in the Yard
- 5.5 Hours VA
- 91 Hours NVA

Delay Ration
- 5.5/96.5 = 5.7% Efficient