



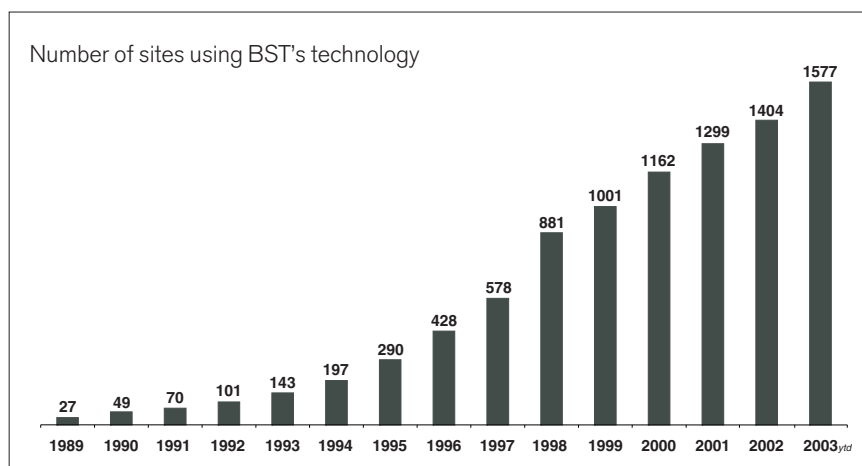
# BST is the Global Leader in Behaviour-Based Safety and Behaviour-Based Performance Improvement



Countries using BST's technology (highlighted in yellow)

## World-Wide Experience

BST is an international performance solutions company focused on connecting people and systems. Founded in 1979 by Thomas Krause, PhD, and John Hidley, MD, BST pioneered the application of behavioural science methods to performance improvement, helping our clients make dynamic and sustainable gains in the areas of safety performance, workers' compensation costs, first-pass quality, error reduction, productivity, absenteeism, and other critical performance metrics. BST's comprehensive process technology has helped over 1,500 sites in 46 countries worldwide achieve outstanding performance.



BST has a staff of approximately 100 people located throughout the US, with a subsidiary in the UK and affiliates in Europe, Australia, Singapore, Korea, and South Africa. BST's staff includes experts in behavioural science, engineering, statistics, management, safety, industrial hygiene, quality, and operations. BST is the only organisation in the field that has published long-term results of its overall behaviour-based client experience in an independently reviewed technical journal (*Safety Science*, 32 (1999) 1-18.)

# A Partial List of BST Client Companies

3M Company  
Abbott Laboratories  
Advanced Silicon Materials, Inc.  
AERA Energy LLC  
Agilent Technologies  
Agri-Mark, Inc.  
Agrium CFO  
Akzo Nobel Functional Chemicals LLC  
Alberta Pacific Forest Industries, Ltd.  
Alcan Aluminio do Brasil  
Alcan Cable  
Alcan Jamaica Company  
Alliant Techsystems  
Alumina Partners of Jamaica  
Aluminerie Lauralco, Inc.  
Aluminum Company of America  
AmerenUE  
American Airlines  
American Electric Power  
American Meter Company  
Ameristeel  
Amtrak  
Apache Nitrogen Products, Inc.  
Applied Extrusion Technology, Inc.  
Arch Chemical  
Armstrong World Industries, Inc.  
Armtec Defense Products Company  
Arteva Specialties S.R.L. de C.V.  
Ashland Chemical Inc.  
AstraZeneca  
AT&T Network Systems  
Atofina  
Autopartes Walker, S.A. de C.V.  
Avecia  
Aventis Pharma  
Avery Dennison  
AvestaPolarit  
Basell Polyolefins  
BASF Corporation  
Basic American Foods  
Bayer Corporation  
BHP Billiton  
BNFL THORP  
The Boeing Company  
Boise Cascade Corporation  
BPAmoco  
BP Exploration Alaska, Inc.  
Brasflex Tubos Flexiveis Ltda.  
Braun Electric Company, Inc.  
Bridgestone/Firestone, Inc.  
Bristol-Myers Squibb Company  
BWXT Pantex  
Cabot Corporation  
Calgon Carbon Corporation  
Canada Steamship Lines  
Cardolite Corporation  
Cargill, Inc.  
Cascade Hardwood  
Caterpillar, Inc.  
Cedar Chemical Corporation  
Celanese  
Celanese Mexicana S.A. de C.V.  
The Cessna Aircraft Company  
Champion International Corporation  
Chevron Phillips Chemical Company  
Chicago Metallic Products, Inc.  
Cianbro Corporation  
CITGO Asphalt Refining Company  
CITGO Petroleum Corporation  
City of Albuquerque  
Clariant Corporation  
Cleanaway Ltd.  
Coflexip Stena Offshore  
Colgate Palmolive Company  
Collins Pine Company  
Collins Products LLC  
Conoco Ltd.  
Constellation Power Source  
Cummins, S. de R.L. de C.V.  
DaimlerChrysler de México S.A. de C.V.  
Derivados Macroquimicos S.A. de C.V.  
Dynasol Elastómeros, S.A.  
Eastman Kodak  
ExxonMobil Chemical  
Finning, Ltd.  
Flextronics Aquas Calientes Servicios  
Gaylord Container Corporation  
General Electric Specialty Chemicals, Inc.  
Gentek  
Georgia Gulf Corporation  
Georgia Pacific Corporation  
GIRSA Corporation  
GlaxoSmithKline  
Golden State Drilling, Inc.  
The Goodyear Tire & Rubber Company  
Grupo Celanese S.A.  
Gulf Power Corporation  
Halliburton Energy Services  
Hampshire Chemical Corporation  
Harry S. Peterson Company  
Hemlock Semiconductor Corporation  
Henderson Mine & Mill  
Henkel Corporation  
Hercules Canada, Inc.  
Hewlett-Packard Company  
Hill's Pet Nutrition  
Hillside Aluminium Smelter  
Hoffmann La Roche Inc.  
Honeywell International  
Hovensa L.L.C.  
Hunt Graphics America  
Huntsman Corporation  
ICI Paints  
Illinois Cereal Mills, Inc.  
Illinois Power Company  
IMC Chemicals  
IMC Phosphates  
IMC Potash  
INSA - Planta Emulsión  
Insulate Industries, Inc.  
Intel Corporation  
International Paper  
Irving Oil  
ISP Chemical, Inc.  
ITW Paslode  
James Hardie Building Products  
John Brown Constructors  
Johns Manville International, Inc.  
Johnson & Johnson  
Johnson Polymer  
Kaiser Aluminum & Chemical Corporation  
Kaneka Delaware Corporation  
KAW Pipeline, Inc.  
Kelly Springfield Tire Company  
Ken Small Construction, Inc.  
Kimberly Clark Corporation  
KoSa  
The Kroger Company  
Lafarge Calcium Aluminates, Inc.  
Lawrence Livermore National Laboratory  
Lockheed Martin Missiles & Space Company  
Lone Star Industries  
Los Alamos National Laboratory  
Lowe's Companies, Inc.  
Lyondell Chemical Company  
Lyondell-Citgo Refining LP  
Maclaren Energy/Great Lakes Power Trust  
Madison Paper Industries  
MagneTek Inc.  
Maine Medical Center  
Mallinckrodt Inc.  
Marathon Ashland Petroleum LLC  
Maraven de Cardon  
Martin Marietta Energy Systems  
Material Science Corporation  
Mattabi Mines Ltd.  
Maytag Appliances  
McDermott International Inc.  
MeadWestVaco  
MEMC Electronic Materials, Inc.  
Merck, Sharp and Dohme  
Methanex Corporation  
MidAmerican Energy Company  
Millennium Chemicals  
Miller Brewing Company  
Monsanto  
Montana Refining Company  
Morton International Inc.  
Motiva Enterprises LLC  
MTR Corporation  
National Copper Products, Inc.  
National Park Service  
Naval Aviation Depot  
Naval Weapons Center  
Nestlé USA  
Nhumo, S.A. de C.V.  
Northern States Power Company  
Northwest Alloys, Inc.  
Nova Chemical Corporation  
Novacel, S.A. de C.V. Planta Tlaquepaque  
Olin Corporation  
Ontario Power Generation Inc.  
Orica Australia Pty Ltd.  
Oscar Mayer Foods Corporation  
Owens-Corning  
PACCAR  
Pacific Gas & Electric Company  
PACTIV  
Papier Masson Limitée  
Parsons Benicia Clean Fuels Project  
PCS Nitrogen, Inc.  
Peak Oilfield  
Pennsylvania Power & Light Company  
Petro-Canada  
Petrozuata, C.A.  
Pfizer Inc.  
Phillips Petroleum  
Pillsbury Green Giant Company  
Plastiglas de Mexico, S.A. de C.V.  
Poly-Bond, Inc.  
Port Townsend Paper Corporation  
Portland General Electric Company  
Potlatch Corporation  
PPG Industries, Inc.  
Productos de Consumo Resistol, S.A.  
PTLA  
Quality Tubing, Inc.  
RATP  
Rayonier, Inc.  
Reckitt & Colman  
Reddinger Constructors, Inc.  
Reltec, Inc.  
REXCEL, S.A. de C.V.  
Rhodia, Inc.  
Riviana Foods, Inc.  
Robert Heely, Inc.  
Robison Oil Tools  
Rock-Tenn Company  
Rockwood Specialties  
Rohm and Haas Company  
Sacramento Municipal Utility District  
Sappi  
Seagate Technology  
Services Industriels de Genève  
Scot Forge Company  
Scott Paper Company  
SD Warren  
Seadrift Coke, L.P.  
Seminole Electric Cooperative Inc.  
Shaw Industries  
Shell Exploration & Production Company  
Sierra Pacific Power Company  
Smurfit Newsprint Corporation  
Smurfit Stone Container  
Solutia, Inc.  
Solvay Interco  
Sonoco Limited  
Sasol Polymers  
Sasol Chemical  
Southern Clay Products, Inc.  
Southern Nuclear Operating Company  
SP Newsprint Company  
Stanford Linear Accelerator Ctr. (SLAC)  
State of Kansas  
Stupp Corporation  
Suriname Aluminum Company  
Talleres Navales del Golfo S.A. de C.V.  
Tennalum-Division of Kaiser  
Tenneco Automotive  
Tenneco Packaging, Inc.  
Terra Nitrogen  
Tesoro  
Texaco, Inc.  
Tiwest Joint Venture  
Trapper Mining, Inc.  
Trespahan de Mexico, S.A. de C.V.  
TRW Fuji Valve, Inc.  
TXU  
Tyco Electronics  
UCAR Carbon Company  
Unilever HPC U.S.A.  
Union Pacific Railroad  
Uniroyal Chemical Company, Inc.  
Valero  
Venco  
Vistakon  
Visy Flex  
Voltek, Inc.  
Vulcan Chemicals  
Wackenhut Services, Inc.  
Welchs, Inc.  
Westinghouse SRS  
Westvaco Corporation  
Weyerhaeuser Corporation  
Wilbur Chocolate Company  
Willamette Industries, Inc.  
Willan Metals  
Wisconsin Power & Light Company  
Wyman Gordon  
Xerox



## The Role of Senior Leadership

*Powerful yet practical strategies for leading the way to outstanding performance*

Senior executives, leaders, and managers have limited time, but substantial potential leverage within their organisations; their own behaviours are highly influential and strongly impact the behaviours of others. The difficulty for many of these leaders is in knowing how to harness their time efficiently. BST's unique set of leadership tools allow executives to become increasingly deliberate and effective when:

- Deciding *What* to focus on
- Determining *How* to act on that focus

Using a combination of leadership coaching, consultation, and organisational feedback, BST works with senior leaders to develop powerful performance strategies that add results without adding substantially to the leader's workload.



## The Role of Managers and Supervisors

*Bridging the gap between on-the-floor practices and organisational objectives*

Front-line managers and supervisors bring significant expertise and on-the-floor influence to any safety initiative. The difficulty has long been how to engage them effectively in safety objectives in a way that works with, not against, their production duties.

BST's *Enhancing Supervisor Effectiveness* training provides the tools and skills team leaders need to integrate organisational safety objectives with day-to-day production activities. Using an engaging seminar format, an experienced BST consultant shows your team leaders how to manage human performance, actively develop a high-performing culture, understand the difference between leadership and management, and work with individuals in a way that improves the overall performance of the organisation.



## Employee Engagement

*Building powerful safety improvement from the ground up*

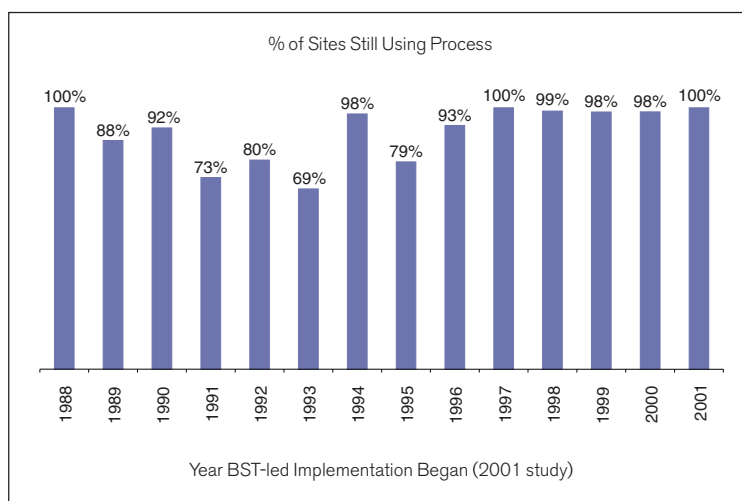
Exposure to injury occurs in the working interface – the place where conditions and systems interact with what people do. Yet too often, the shop floor employees who work at the heart of this interface are not meaningfully involved in improvement initiatives.

BST's Behavioural Advanced Performance Process® (BAPP®) technology allows organisations to harness the insight and ingenuity of shop floor employees for accelerated safety performance. Experienced BST consultants work with a cross-section of employees to identify critical behaviours, build observation and feedback skills, and provide ongoing barrier removal mechanisms, creating a safety initiative with unparalleled ownership and results.

# Sustainability of BST's Technology

## System Longevity

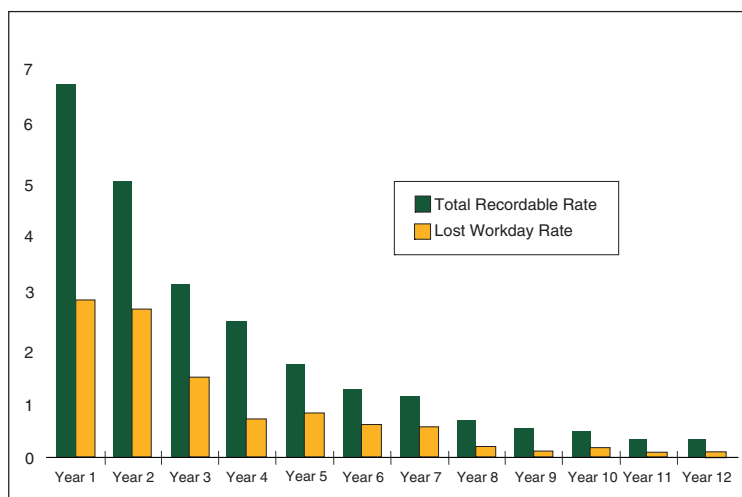
BST's technology is highly sustainable. The chart at right shows the percentage of BST-led implementations started in the given year and still functioning today. The majority of these sites have experienced major reorganisations, changes in site leadership, changes in ownership, downsizing, or other disruptive events. Even with these changes their BST initiatives survive and their organisations continue to reap the benefits.



Process sustainability

## Long-Term Continuous Improvement

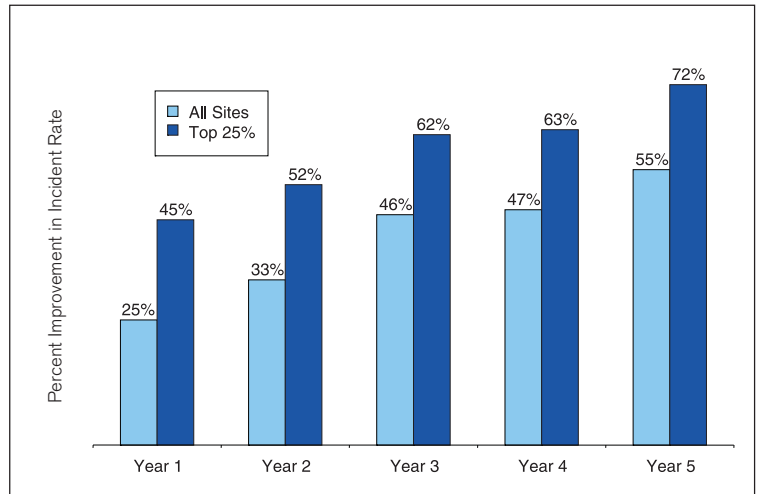
BST's comprehensive methodology builds continuous improvement mechanisms into the core of its technology. In addition, our Research and Development department continues to update its findings of critical success factors and performance outcomes of this technology — and shares this knowledge with our client base. At right, a 1,000-employee chemical plant experienced dramatic and sustained results from their behaviour-based safety effort.



Long-term continuous improvement

## How Well Does BST's Technology Work?

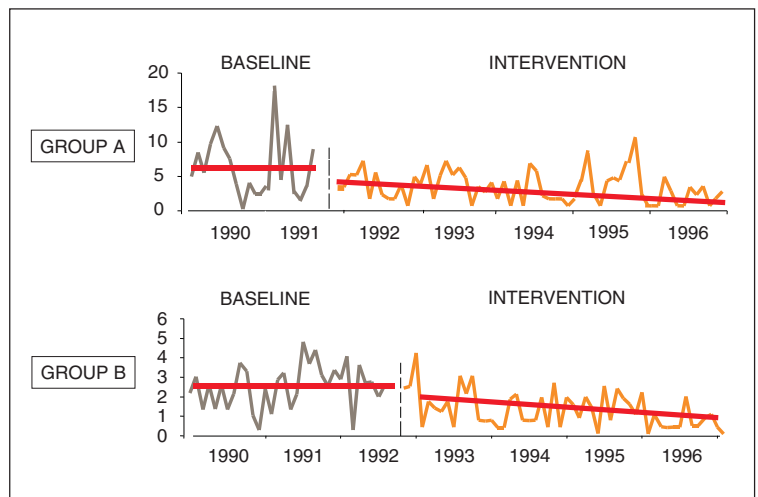
The chart at right shows the results of the largest study ever published demonstrating the effectiveness of any behaviour-based approach; however, the results are specific to BST and do not generalise to all behaviour-based approaches. Based on a representative sample of 153 user sites, it shows that the average user site achieves a 25% improvement over baseline in the first year of its process, increasing to 55% improvement over baseline in the fifth year. The top 25% of users achieve better than 45% improvement over baseline in the first year, increasing to 72% in the fifth. An early edition of this study has been reviewed by independent experts and published in a peer-reviewed journal (*Safety Science*, 1999, Vol 32, pp 1- 18).



Overall Effectiveness of BST's Technology

## Multiple Baseline Study

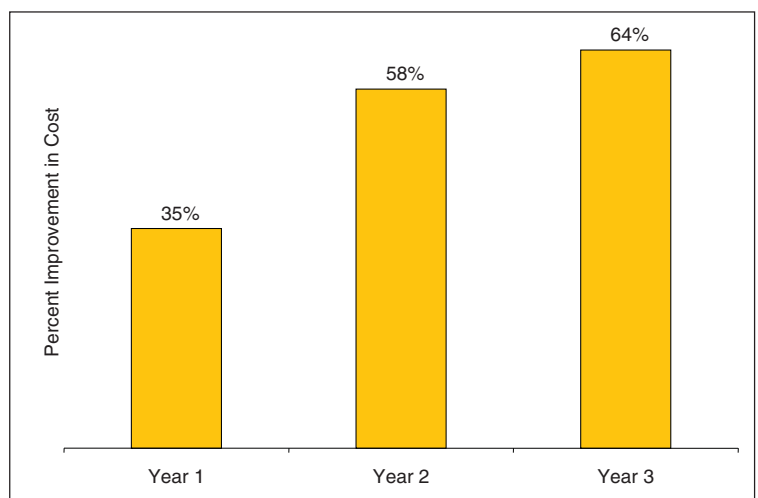
Establishing cause and effect relationships in applied research is nearly impossible to do. Demonstrating improvements in performance coinciding with hundreds of implementations across various times, companies, industries, etc. goes a long way toward establishing BST's behavioural technology as the causal influence, but it is not conclusive. Multiple baseline studies like the one shown here help rule out alternative explanations for the improvement. Combined results from two groups of organisations starting behavioural observations at different times show that improvement did not occur until after behavioural observations began in either case. This type of research design is widely accepted as providing relatively strong evidence of a cause-and-effect relationship, in this case between BST's behavioural technology and the improvement seen.



Multiple Baseline Study of BST's results

## Workers Compensation Costs Reduction

Evaluating the impact of safety initiatives on workers' compensation costs is a challenging task. Claims history and reporting are so highly variable that they seldom provide a reliable measure of the financial benefits of any specific initiative. Nevertheless, we would be very concerned if, on average, organisations did not experience a reduction in workers' compensation costs coinciding with their implementations.



Workers' Compensation Cost Reduction (21 Sites)

This chart shows the average percent reduction in workers' compensation costs across 21 sites. Comparing each year of implementation to baseline, these organisations reduced workers' compensation costs by 35% within 1 year of observations, 58% within 2 years, and 64%

# Mechanisms of BST's Technology

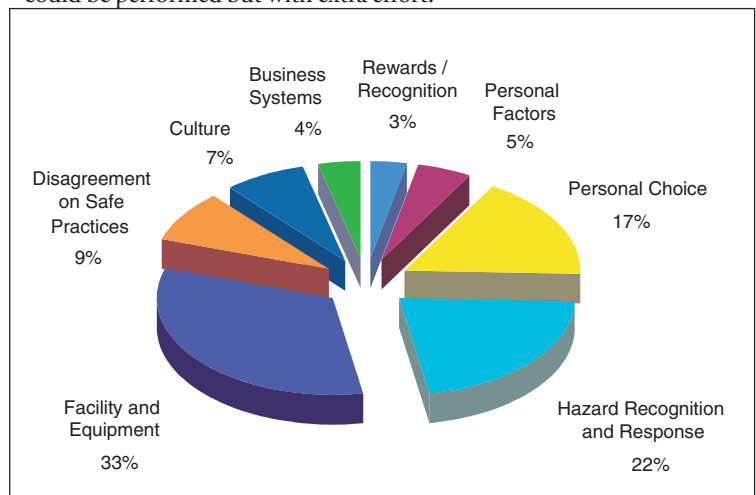


## Measuring and Impacting the Kinds of Behaviour

Human behaviour is a complicated phenomenon. Successful organisations recognise that existing systems, conditions, or culture do not always support desired behaviour. Although in such cases it might be possible to achieve a temporary behavioural change through traditional awareness efforts or through disciplinary action, organisations seriously committed to long-term improvement know they have to identify and address the underlying reasons that exposures occur. In this connection BST has found that desired behaviour can be grouped into the three broad categories **enabled**, **non-enabled**, and **difficult**. Enabled behaviours are those that are within the control of the employee. Non-enabled behaviours are those the employee could not perform, even if he or she wished to do so. Difficult behaviours are situations where the desired behaviour could be performed but with extra effort.

## What the Data Shows

This chart summarises undesired behaviour over a two-year period from five sites. A total of 13,264 risks were logged and categorised by the primary factor preventing desired behaviour. Arguably, only one category represents enabled behaviour: Personal Choice. All other barrier categories contain elements of being non-enabled. Personal choice was the primary barrier in only 17% of the risks, which means the majority of at-risk behaviours are not enabled. *These findings support the conclusion that reinforcement alone won't work in many situations.*

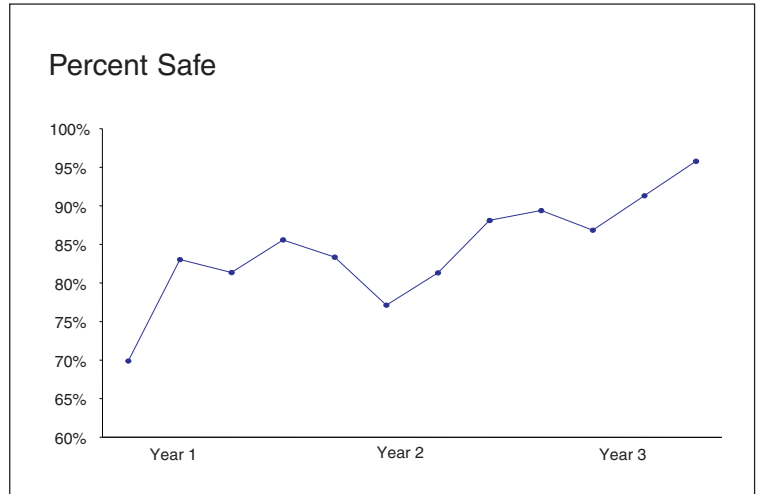


Proportion of barriers for 13,264 undesired behaviours

## The Limitations of Behavioural Observation and Reinforcement

Many simple "behavioural" approaches are based on the concept that reinforcement shapes behaviour, and therefore reinforcing desired behaviour is all one needs to do to improve. As the above study shows, this approach is flawed; there are many situations in which no amount of reinforcement, however skillfully delivered, can make a difference. Why? Because the root cause of the problem is not the person, but rather the *interaction* between the person and his/her environment. This is what BST calls the *working interface*.



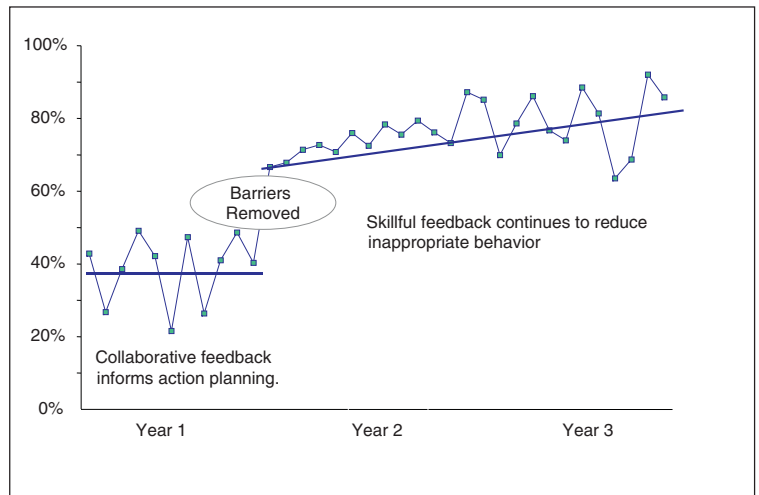


Housekeeping improved with skillful reinforcement

BST has studied how skillful reinforcement interacts with the working interface. The charts seen here contrast two items observed over a period of three years in which employees received specific, credible, and collaborative reinforcement.

The housekeeping chart shows an enabled item that responded to skillful reinforcement. The percent score for this item consistently increased over the three-year period in which the reinforcement was provided.

The pinch points chart at right shows a non-enabled item that responded to reinforcement only after barriers were removed. Initially, observation and feedback did not change this exposure. However, the process observers captured information that helped site management remove system barriers to the desired behaviours. The item then immediately improved by about 25%, but because it was now possible for employees to avoid pinchpoints and still get their jobs done, skillful reinforcement helped improve the item further.



Pinch points improved only after barriers were removed



## Engagement is Critical to Success

In one study, we reviewed 37 instances of TQM success and failure. Like BST's technology, TQM involves profound organisational change that has the potential for far-reaching benefits. Unlike BST's methodology however, TQM does not enjoy a high success rate.

Consequently, TQM initiatives have been studied extensively with the aim of identifying factors critical to their success. The same themes surfaced repeatedly, themes that are congruent with BST's parallel research on the success and failure of BST-led initiatives

One of the most common themes, cited in 76% of the articles on TQM success and failure, was engagement. Effective implementation efforts fostered engagement at all levels of the organisation, ignoring neither upper management, supervisors, nor front-line employees.

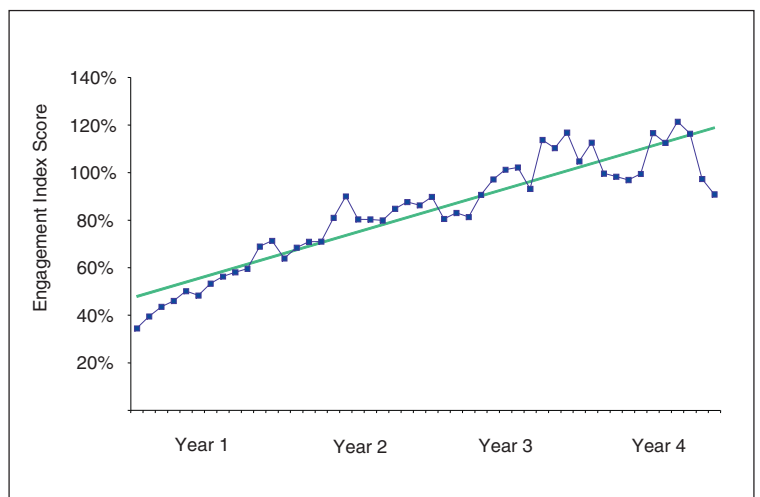
## Increasing Engagement is the Norm for BST Implementations

This chart shows BAPP engagement over a four-year period across 240 BAPP-user sites worldwide. The engagement index is a lower-bound estimate of the percentage of site employees who *actively* participate in the process each month. When enough employees participate above and beyond what is expected, the engagement index will sometimes exceed 100%.

Opportunities for meaningful participation include serving on the implementation team, facilitating the process, being a management sponsor, observing, being observed, contributing to an action plan, and numerous other small, but vital, roles.

The chart above right demonstrates several important characteristics of BST's technology:

- First, engagement increases steadily over time. This is both a reason for, and a result of, its sustainability.
- Second, sites typically start out with less than half of the workforce engaged; as the process matures, and as employees learn it's not a "flavor of the month," buy-in increases.
- Third, after the process reaches full strength, the engagement index exceeds 100%.



Increasing Engagement is the Norm for BST Implementations

# Outcomes of BST's Technology

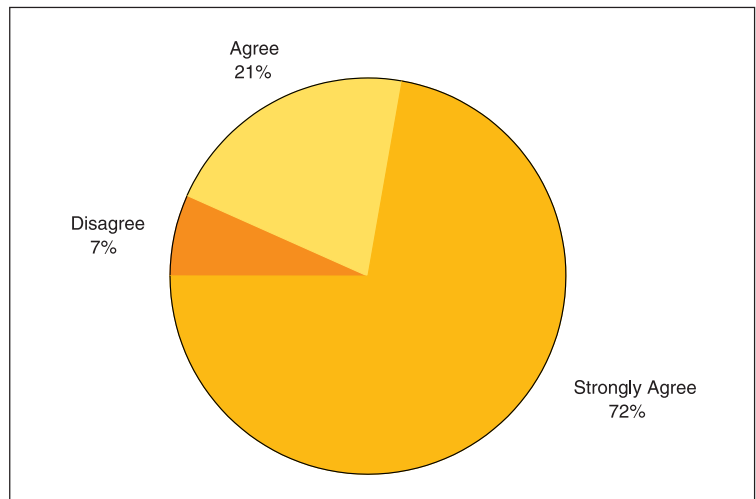
## Perceptions of Success

Organisations use BST's behavioural technology for a variety of reasons, not just to reduce workplace injuries or illnesses. Roughly one third of BST clients already have exemplary performance when they come to us; these sites implement BST's technology to build on their existing success. Some see the use of this approach as a way to improve communications, teamwork, morale, and even operations efficiency. This study asked a representative sample of facilitators from BST consultant-led projects in the United States to answer the question, *"To what extent do you agree that your process is a success?"*

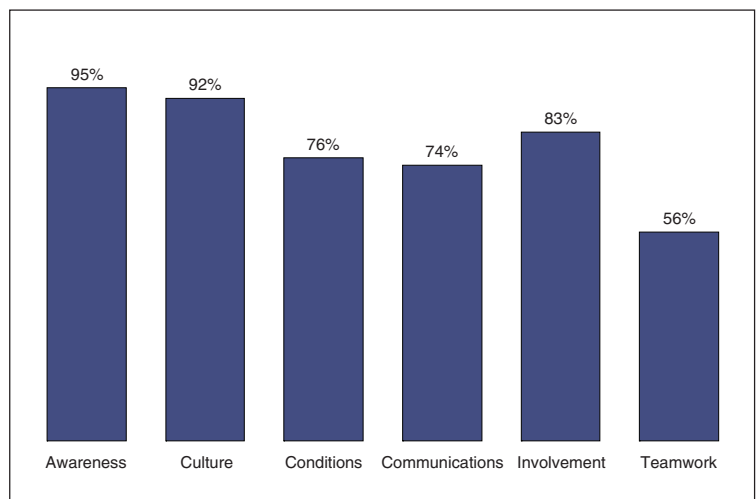
The respondents had been using BST's technology from anywhere between 1 to 15 years. Responses did not vary by the age of the process. *The overwhelming majority (93%) of facilitators either agreed or strongly agreed their process was a success.* Even those who rated it a moderate success wrote very positive comments, such as, "Our department has gone four years without a [disabling injury] case," and "The process is definitely working." Reasons for disagreement included, "We're in the midst of labour contract negotiations," and "The process really never got started."

## Positive Culture Change

When an effective performance improvement process is implemented in a way that builds ownership, skills, and involvement among site personnel, positive cultural change easily follows. BST's technology is exceptionally strong in the areas of employee buy-in, building feedback and coaching skills, and systematic problem solving — all of which support culture change.



Perceptions of Success



Positive Organisational Change

Managers' response to how strongly they agreed or disagreed that their BST-led implementation had significantly contributed to improvements in each of the areas charted.

The chart above is derived from a study that evaluated managers' perceptions of the impact of this technology in a variety of areas. We asked a representative sample of managers how strongly they agreed that their behavioural implementation had contributed *significantly* to improvements in each of the areas charted. Nearly all managers agreed that BST's technology had significantly helped improve awareness, culture, and employee involvement. A majority of managers also agreed that it significantly helped improve conditions, communications, and teamwork.

## Quality

These data, from an electronics company located in Alabama, show the reject rate of electrical boards. In 1993 this facility, originally built for high-volume, changed its emphasis from production quantity to production quality. Safety, housekeeping, and quality were all considered a part of this initiative. Major corporate downsizing accompanied this shift as well. These data represent the quality measures *after* the shift, so the improvement we see here is not just due to the restructuring and change in emphasis.

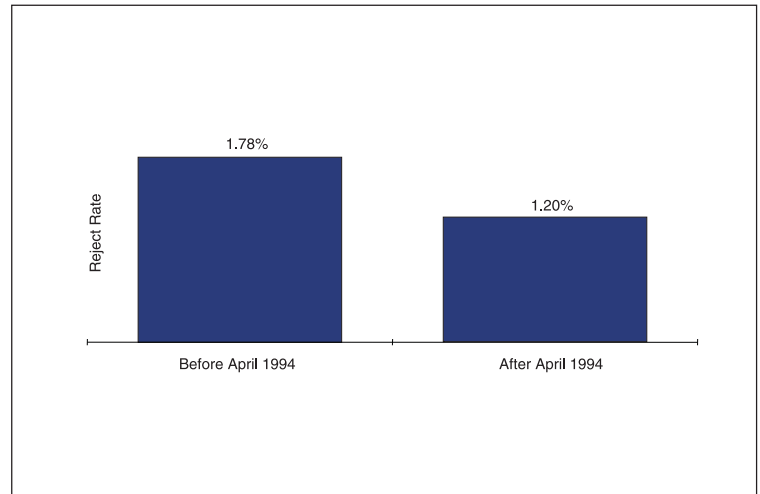
Quality did not improve immediately after the change in emphasis, but it did begin to change as soon as behavioural observations started.

Management at the site reported, “The BST system has affected our plant to every degree. Employees are more conscientious, and they concentrate on performance.”

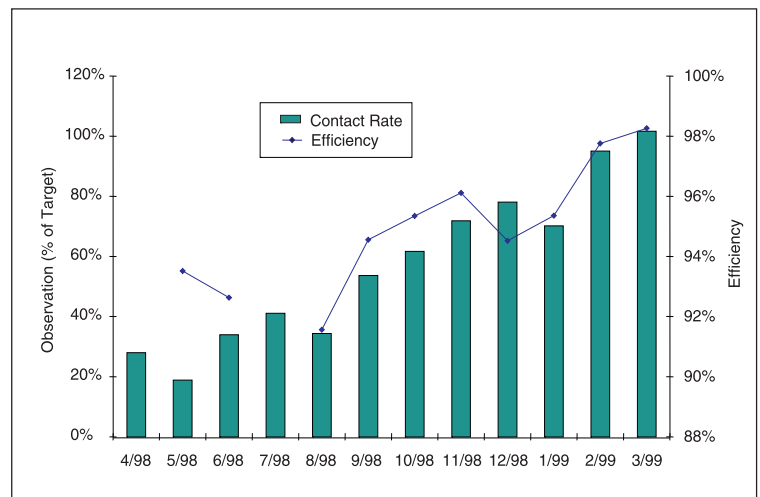
## Labour Efficiency

This study shows results from 18 sites in a single corporation that tracked labour efficiency. Because the sites all manufactured different parts, a standardised measure of efficiency had to be developed. The solution was to develop norms: each plant, depending on its size and type of part being manufactured, knows how long it should take to build the number of parts it built, and afterwards compares this to real hours worked.

This study showed that as behavioural observations increased corporate-wide (as measured by the % of target observations achieved), so did labour efficiency. The most cautious interpretation of this data is that the time spent on BST’s continuous improvement process doesn’t hurt productivity. When the corporate managers reviewed the findings, they noted, “the process has not had a negative impact upon labour efficiency and productivity, and in fact there appears to be a positive correlation.”



Quality (Reject rate)

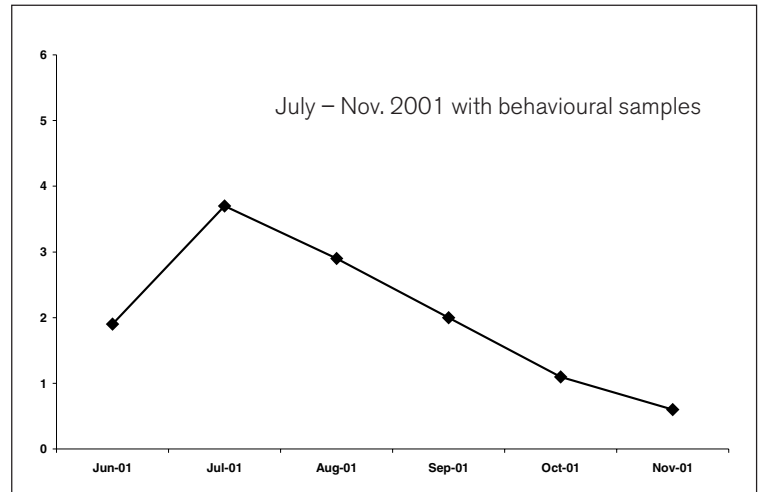


Labour Efficiency

(Note: No efficiency data were collected in July 1998.)

## Reduction in Non-Conforming Product

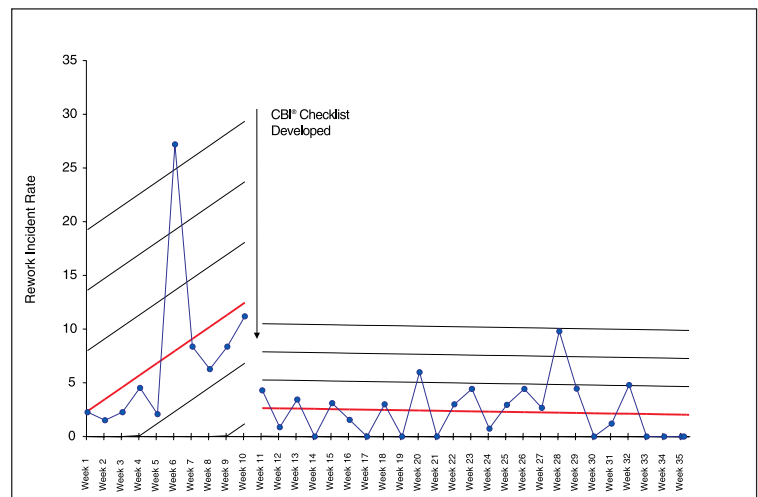
In a recent effort to improve profit margin this Texas-based producer of specialty clay minerals used behaviour-based performance improvement technology to reduce the amount of non-conforming product on its lines, resulting in less cost and increased efficient capacity. The site realised that the power of the technology it had already implemented in the area of safety could be used for product quality, with the initiative paying for itself in less than six months.



Reduction in Non-Conforming Tons of Material per 100 Tons Produced

## Reduction in Rework

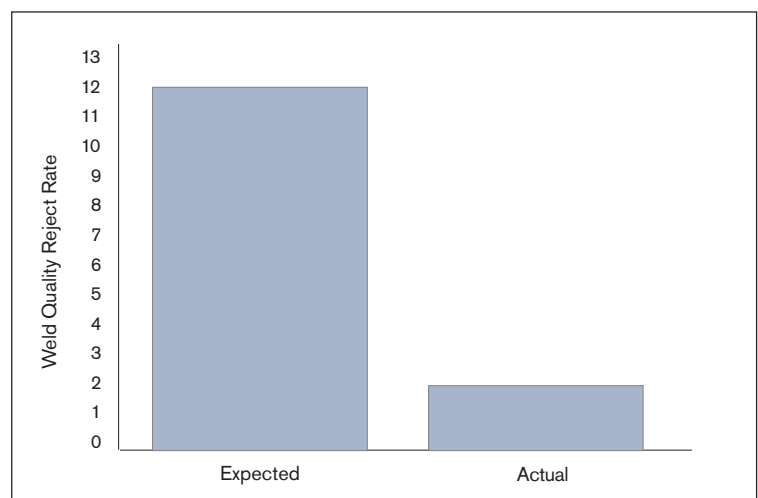
This corporation specialises in document reproduction, and customer service is a high priority. In 1999 BST applied its technology to develop a behaviour-based customer service/quality model for the company's flagship branch. The goal of this project was to reduce the store's project rework rate by 30% in the first full year of implementation. This outcome is consistent with results that BST clients have achieved using behaviour-based performance improvement in other interventions.



Print Services Improved Quality – Less Rework

## Capital Project Brought in On Time and Under Budget

This petrochemical producer was installing a gas plant, a large capital project. Previous experience building this type of facility highlighted the importance of welding. This organisation had worked with BST using behaviour-based improvement technology to improve several process operations. The results of applying behavioural technology were impressive. The weld reject rate for the project was 2% compared to the best-expected figure of 12%. This reduction of rework by more than 80% from the expected rate resulted in considerable cost savings. The improvement in weld quality also had a positive effect on the overall project schedule.

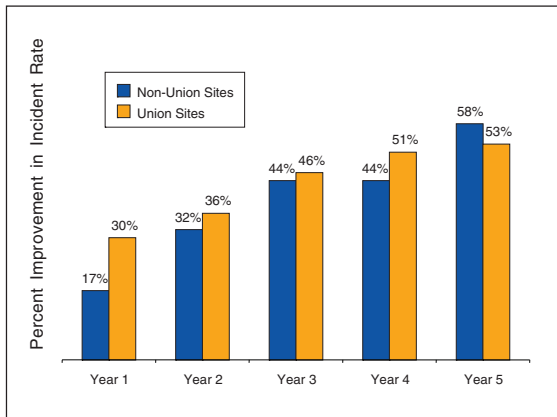


Pipeline Construction Improved Weld Quality

## But Can it Work in My Organisation?

Because every organisation is unique, BST's behaviour-based performance improvement methodology is adaptable to various needs and cultures. In this study, we posed the question:

*Is BAPP effective in a variety of industries and settings?*

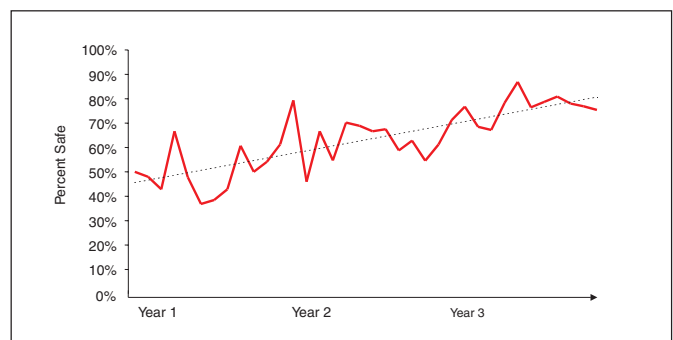
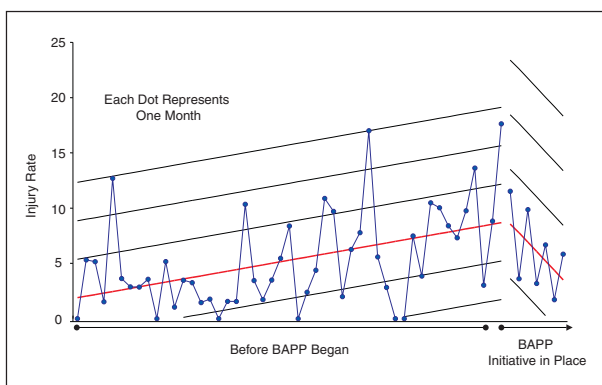
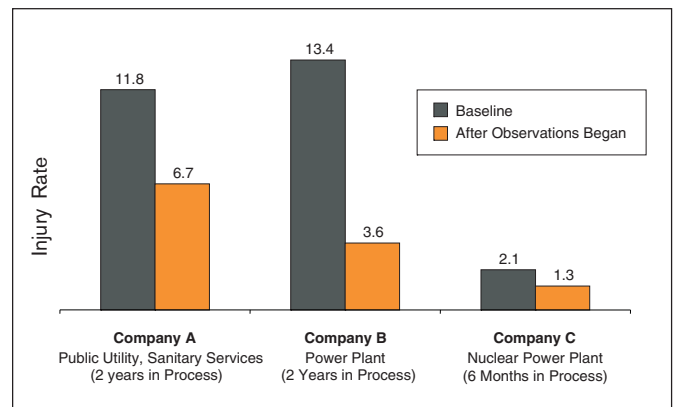


## Union and Non-Union Sites

We are often asked how effective BST's technology is in union environments compared to non-union environments. This study compared the results of 75 union sites to 77 non-union sites. Contrary to many expectations, union sites see greater improvement in incident rate in their first year, although non-union sites catch up by the second year. Differences after Year 1 are not statistically significant.

## Utilities

Results from three different types of utilities show the flexibility of BST's technology in different environments. Company A is a public sanitation utility employing 380 workers in remote locations. In the first two years of using BST's methods and tools, this site improved its injury rate by 43%. Company B, a Montana power plant employing 250 workers, improved its injury rate by 73% during its first two years. Company C represents a much smaller site. A 35-employee nuclear power plant in Canada, this utility improved its injury rate by 38% during the first six months of its BST-led implementation.



## Pharmaceuticals

This 500-employee drug manufacturer in Puerto Rico successfully used BAPP technology to reverse a four year increasing trend in injury rate.

## Office

This 75-employee office used BST's technology to reduce its exposure to carpal tunnel syndrome. The increase in percent safe in wrist and arm position indicates that observation, feedback, and action plans to improve the working interface did, in fact, decrease exposure. Second, the value of having the measure itself is noteworthy. Before the process, the company had no way of measuring its level of performance.

## Worldwide Application

While workplaces will always differ according to country and culture, one thing remains universal: the need to improve performance systematically and reliably. BST's technology has helped companies in 46 countries reduce injuries, use data to make improvement decisions, and engage employees in workplace objectives. BST consultants and BST-trained Internal Consultants have demonstrated the compatibility of BST's implementation methodology with diverse cultures and languages. Whether the technology is applied in English, Spanish, French, Portuguese, Dutch, German, Italian, or another language, the success is the same. Following are just three of these success stories.

## Australasia and Indonesia

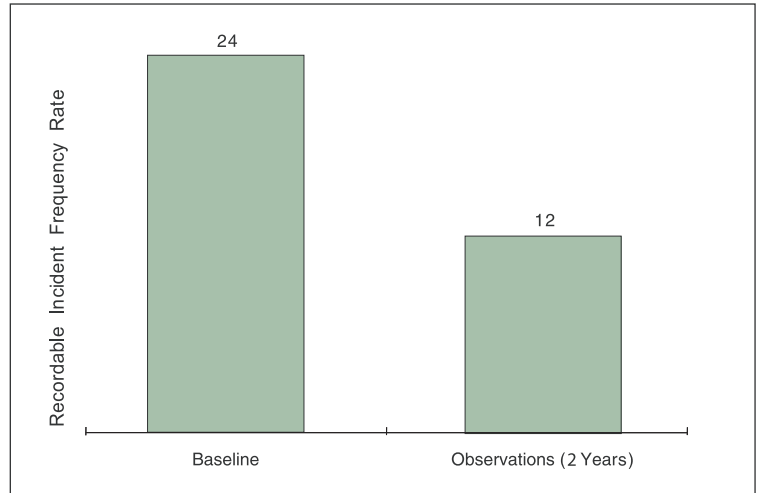
In Australasia and Indonesia, BST's technology has been applied in over 100 client sites during the past decade. Implementations have successfully built from operator processes of BAPP through to engagement of all levels of leadership utilising BST's latest tools of engagement. In one mining company the behavioural implementation was so successful in reducing safety incidents, standardising safety practices and improving culture, there are now 25 locations currently experiencing the benefits of the Leading with Safety approach. Other client sectors working with risk-e include chemicals, pharmaceuticals, food, packaging and paints manufacturing along with utilities and semi government organisations.

## South Africa

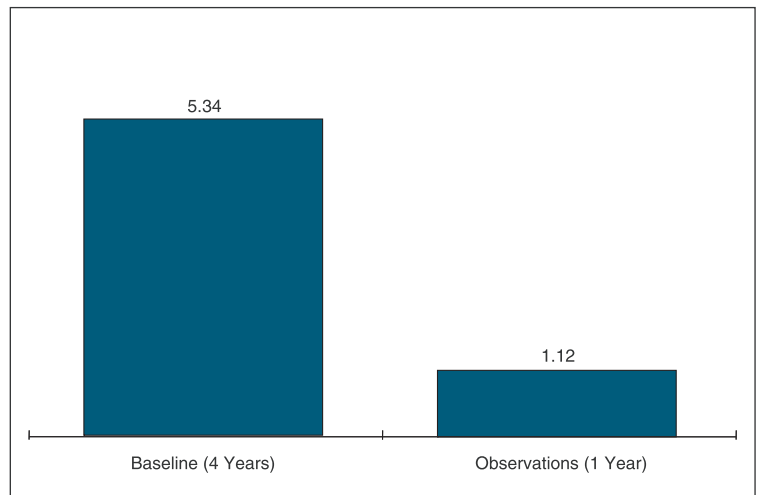
To date, four major corporations in South Africa are using a behaviour-based approach to performance improvement. One of these corporations has expanded from using BST consultants to having their own Internal Consultants trained by BST to implement at more than 20 units. Another company, which started its behavioural implementation with already good safety performance, has proved so successful that three new sites are starting implementations of their own.

## The United Kingdom & Europe

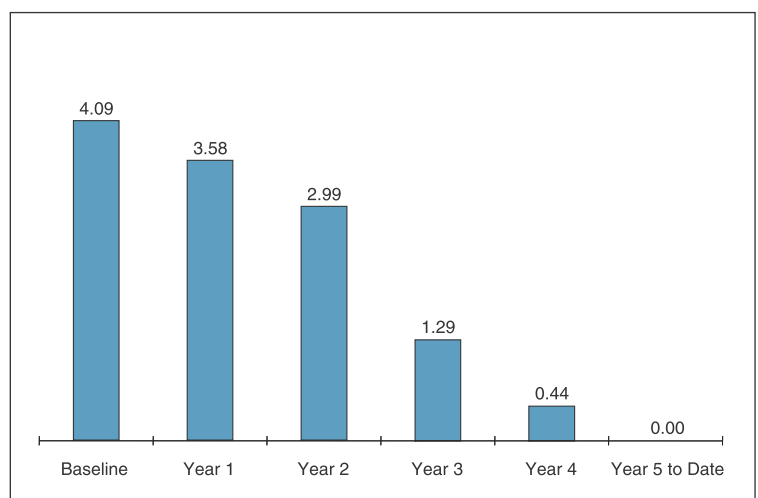
Our European clients show some dramatic results. At one particular site, previous attempts at extending safety to all employees were unsuccessful, but since implementing BST technology 100 out of 750 employees are now active observers. Now in its fifth year, this site continues to make gains — and involve employees of all levels — in continuous safety improvement.



Mining Company in Australia – Four Sites 50% Improvement in Critical Incident Frequency Rate Within First Two Years of Observations



Aluminum Company in South Africa  
79% Improvement in Lost Time Case Rate Since Observations Began



Paper Products Manufacturer in England  
Percent Improvement in Lost Time Incident Rate by Process Year

# Critical Success Factors

BST's research and experience has led to an unmatched level of understanding of what makes change efforts successful and sustainable in many performance areas. To be successful, you must focus on both *what* you do (for example, implementation team size and meeting schedule) AND on *how* to proceed (for example, team selection process and communications strategy.) Our research has found that of all critical success factors, there are four that are pivotal: *Engagement*, *Competence*, *Framework* and *Connections*. Our approach to implementation is designed to guide you in a way that allows you to build your system around these factors.

**Engagement:** For a new process to become established and have long-term success, ownership and *engagement* (buy-in) are critical. Without engagement across levels, an implementation effort will fade away as soon as top down pressure or support is withdrawn. BST's implementation process is specifically designed to help you leverage the appropriate level of engagement by level. In addition, the number of people engaged increases across time thereby contributing to a culture in which safety is supported and sustained as a way of doing business.

**Competence:** The critical success factor *competence* refers to the process of ensuring that your organisation builds, and learns to effectively use, the skills, knowledge and experience to successfully implement and sustain your BST initiative. Equally important is identifying the competence desired at each level of the organisation.

The BST implementation process includes experienced guidance, real-life exercises, and interactions in a just-in-time training methodology. This allows users to turn theories and concepts into practical methods for continuous improvement. Facilitating the learning process in this manner substantially increases retention and competence. The benefits client organisations receive from enhanced competency include greater self-sufficiency with the tools of behaviour-based performance improvement and process sustainability.

**Framework:** *Framework* refers to finding the right balance between structure and flexibility. At the same time, it is crucial to avoid imposing unnecessary structure or rigor on the organisation. Organisations that are serious about achieving their stated objectives spend time developing a plan. This plan takes into account the desired attributes, objectives and challenges. BST helps organisation's tailor the plan.



In the planning session and Implementation Design Workshop, a framework is developed which includes timelines, milestones, resource allocation, and defining roles and responsibilities.

**Connections:** To increase buy-in and sustainability, a change initiative must be in harmony with other systems, and must have ways to keep current with developments in the field. From an *external* perspective, *connections* refers to the mechanisms for consultant contact, networking, benchmarking, refresher training, exchanging best practices with other sites, and professional development seminars that ensure BST's behaviour-based process remains on track for success.

From an *internal* perspective, *connections* refers to the integration of BAPP technology with existing systems. This integration may involve melding together other compatible initiatives, utilising existing problem-solving teams or finding other ways of incorporating the skills and resources of the organisation.

# Connecting People and Systems

## BST's approach offers the best value for numerous reasons:

*Experience:* BST pioneered the behaviour-based approach to performance improvement in 1980, and through more than 1,500 implementations worldwide has customised and adapted it to a wider range of company cultures and industries than anyone else in the performance improvement consulting business.

*Success:* BST is the only firm that has valid data on the results its unique approach to integrated behaviour-based performance achieves. The results are representative of our complete body of clients, and have been published by an independently reviewed safety management journal reflecting long-term (five years) results.

*Continuous improvement:* BST's commitment to tracking and studying client results is indicative of the emphasis we place on continuously improving the tools and methods we can offer to our clients. Currently we are implementing version 8.0 of BAPP technology, based on lessons learned since 1979. These changes have resulted in a higher percentage of successful projects and better overall results than have been documented for any other safety improvement process.

*Attitude, behaviour conditions, culture and systems impact:* BAPP technology achieves improvement across all of these areas by using the principles of behavioural science, quality management, and organisation development as well as using the data to remove barriers to safe work. Other approaches focus on a few of these items, but the BAPP system shows meaningful changes in them all.

BST's technology incorporates mechanisms for addressing enabled, difficult, *and* non-enabled behaviours. This means that your initiative will impact not only the exposures under the direct control of the worker (i.e., enabled behaviours, where reinforcement can be a useful mechanism), but also uses the exposure measurement power of behavioural observations to feed a mechanism for analysis and reduction of non-enabled and difficult behaviors where reinforcement alone is insufficient.

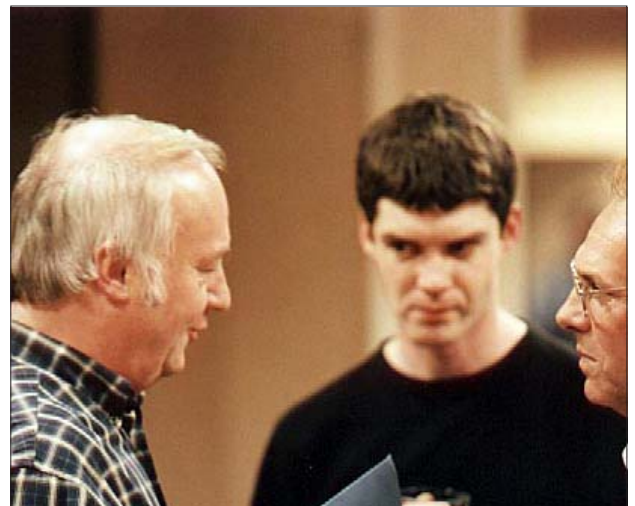
*Integrated applications:* BST's behaviour-based performance improvement technology has been adapted to the areas of safety, quality, executive leadership, customer service, productivity, absenteeism, and medical error reduction.

*Staffing:* BST consultants average more than 20 years of practical experience in a variety of industries and have worked at all organisational levels. These consultants are put through a rigorous selection process before joining BST and, once selected, receive extensive training in behaviour-based safety on an ongoing basis.

*Materials:* BST is the only firm that has comprehensive materials available for its users to support implementation of behaviour-based performance improvement. These materials allow the organisation to avoid the significant investment of time needed to develop and prepare materials. Organisations find the materials are a resource to which they refer on an ongoing basis, and which help the organisation achieve self-sufficiency.

*Long-term support:* BST's users receive a variety of complimentary support services for as long as they continue to do behaviour-based performance improvement. These include a subscription to *Perspectives in Behavioural Performance Improvement* magazine, access to the user discussion forum on the BST web site, and participation in the BST Benchmarking Center. In addition, our Research & Development Department is available to assist with special analyses for clients. The list of BST User Network Benefits that follow further explains our long-term support.

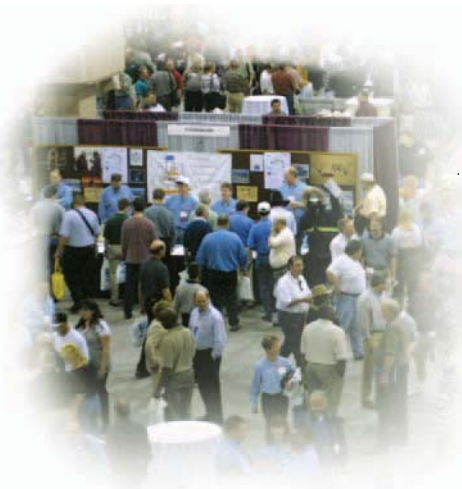
*Continuing education:* Available only to BST clients seeking to extend, expand, or refresh their knowledge of specific behaviour-based safety topics, we offer 19 one and two-day Process Development Seminars. In addition, our Users Conference offers over 180 sessions on specific topics and facilitates networking among the more than 2,200 attendees who make it the largest behaviour-based safety conference in the world.



# BST User Network Benefits

## These Benefits are Available to Sites that are Licensed Users of BST's Technology:

- BST's journal, *Perspectives in Behavioral Performance Improvement™*, a specialised publication dedicated to BST technology system users and their issues, is provided free-of-charge to the implementation teams and management sponsors.
- Each site is encouraged to participate in the BST Benchmarking Center™. This resource, open to participation at no additional cost, provides comparative data on key process indicators and, more importantly, provides bi-yearly reports on research topics aimed at helping sites improve their implementations.
- User site employees have access to the exclusive, restricted users discussion forum on BST's website. On this site, users exchange experiences and ideas, and both BST consultants and other users help sites facing challenges and seeking help.
- Eligibility for *Datalink* analysis in which user data are mined for clues on process improvement.
- Managers at user sites receive BST's quarterly executive mailing in which key issues in safety management are discussed from a manager's perspective.
- Eligibility to purchase BST implementation materials available only to BST network sites including the BST Implementation Manual, Facilitator Handbook, Management Sponsor Handbook, Guidelines for Selection of Implementation Team Members, Observer Manual, and outstanding presentation aids.
- Eligibility to attend BST's Users Conference. The International Users Conference is held in the spring each year in the US, and is the world's largest conference of behaviour-based performance improvement practitioners, with more than 2,200 attendees in 2003. At this conference, attendees gain new knowledge and skills, network with other users, and build momentum for their processes. In 2003, the poster session at this conference featured exhibits by more than 110 user sites, and there were over 180 technical sessions on topics important to both new users and mature processes. This is a fee-based conference open only to BST network sites.
- Eligibility to attend BST's Regional User Workshops, currently held each year in three locations in the U.S., in Latin America, and in the UK. These workshops are tailored for more interactive participation by implementation team members and observers to build skills and support. These are fee-based conferences open only to BST network sites.
- Eligibility to attend Process Development Seminars. These are one and two-day training courses on specific topics of importance to sites as they evolve and strengthen their processes. Examples of the 19 topics available are behaviour-based incident investigation, motivating observers, intensive technology review for new implementation team members, linking ergonomics to BAPP, advanced BAPPTrack® training. These are fee-based training courses open only to BST network sites.
- Eligibility to attend BST's four-day Facilitator Skills Workshop. This is a workshop-based training course designed to build key skills needed by front-line workers involved in leading implementation efforts. The course addresses a variety of topics including communication skills, team building, and project planning.
- Eligibility to attend BST's four-day Managing an Established Process Workshop. This is a workshop-based training course designed to help process leaders learn to recognise and develop strategies for addressing issues associated with processes that are several years old and want to continue to evolve and grow.
- Discounted user prices on BST's videos and books.
- Complimentary user support materials such as: The BST Process Index and Dashboard; The Sustainability Index, a self-assessment tool allowing sites to evaluate certain process characteristics that promote process continuity and long-term success; And the Behavioural Observation Strategy Calculator software tool.
- Special process-related instructional aids may be purchased at nominal cost. These currently include The BAPP Game (a board game for use by implementation teams to promote learning and interaction), and the BAPP Update Video Series, used to share new concepts.





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