Improving the way organizations run through participative planning and management.
Solar Turbines Incorporated
Malcolm Baldrige National Quality Award Winner, 1998

Leadership

Gary Stroup—We have a lot of knowledge about leadership concepts that have worked for us, in our business, and in our industry. We don’t claim to have a cookbook for creating a good leadership system, but we do have some unique ways of providing leadership at Solar Turbines, given the complexity of our worldwide business.

We believe in our ability to align the organization around a common focus, a common set of values, and a common strategy. That has allowed us to achieve the kind of business results we’ve enjoyed over the past ten years, and they have been significant improvements year over year. We are committed to fostering an environment that focuses on learning, listening, and continuous improvement. Our business is somewhat complex. The leadership system at Solar is designed to meet the specific needs of our customers, and is best appreciated by understanding the context within which we operate.

Company overview

Headquartered in San Diego, California, we provide energy solutions for people all over the world. In addition to designing and manufacturing gas turbine engines, we provide a full range of after-market services. We manufacture all our new products in the U.S., which is also home to about 66 percent of our workforce. The rest of our workforce is dispersed among 50 sales and service offices around the world. More than 10,500 Solar gas turbines have been installed in 86 countries. We’re very proud that we are truly a U.S. based manufacturer successfully competing in a global market, with 88 percent of our costs inside the U.S., and more than 70 percent of our combined new product and after-market revenue coming from international locations (Figure 1). To successfully market and sell our products and services around the world, it’s necessary to operate in our customers’ time and space.

We provide highly customized products and services for customers who
produce and transport oil or convert natural gas into energy. These projects are very complex, with up to six months lead time and multi-million dollar price tags.

It is our goal to deliver the best products and services relative to each customer’s perspective, which differs for each one in every country. That requires us to be able to respond quickly, anywhere, anytime, in any part of the world. We depend on the knowledge of our employees in the field, and we depend greatly on their ability to make decisions quickly. It requires us to operate with a common goal of focusing on customer needs, while at the same time maintaining ultimate flexibility in how we achieve that objective.

Mission and values

Our mission states “Focus on customer needs to strengthen our position as the world’s leading manufacturer of mid-range industrial gas turbines and turbomachinery systems.” It is well understood by all of our employees and it gives us a clear and overriding purpose to guide our actions and decisions. We have a set of core business principles or values, understood and embraced by our employees, that guide us in how we go about accomplishing our mission:

- Quality
- Employee Involvement
- Global Market Leadership
- Global Product Support
- International Focus
- Product Development
- Business Performance
- Social Responsibility.

The mission and values stay relatively constant from year to year, and yet they provide us with a firm foundation to determine our strategies, our various action plans, and our measures for success.

We have many stakeholders in our business—multinational customers, employees, suppliers, and investors. It is our job to satisfy all these constituents. The key in our business, with employees located all over the world, is making sure all our employees understand where we’re going and how we plan to get there.
Decentralization must work

While our mission, values, and strategies are global, it is important that our implementation be local. We need people in every region of the world who can understand local customers' needs.

For this decentralization to work, our business has to maintain a thorough two-way communication system. It has also fostered great empowerment of people, whether that means closing a sale in Rio de Janeiro, or determining the best way to get the job done on our shop floor in San Diego. Solar employees live and work all over the world, and many of those employees make critical business decisions every day. It's imperative that our communications remain open and constant, and that we trust each other with information that will help all of us make the best business decisions.

Leadership system overview

Our leadership system comprises three aspects. First, we have a functionally based organization beginning with the president's staff. Second, there's an expanded leadership group of about 450 people, which includes reps from our regional locations. Finally, we have a series of independent cross-functional committees. The leadership system is designed to listen and learn from those closest to the customer in order to develop strategic responses to ever-changing market conditions.

The president's staff comprises a senior member of each functional organization, and is responsible for setting the direction and implementing our corporate strategy and action plans worldwide. The expanded leadership group, consisting of our top 450 leaders, is responsible for ensuring employee involvement in the business, facilitating company-wide teamwork, encouraging cross-functional decision-making, and communicating business information throughout the organization. It also has an important responsibility in helping us develop the next generation of business leaders. Finally, we have a set of cross-functional interlocking committees that draw on the expertise of leaders throughout our business. These committees are formed around key aspects of our business, and they are responsible for setting strategic direction for each of those particular business segments.

While communications at Solar are frequent and ongoing, the interlocking committees meet formally once a month. This allows them to gather and share information, such as how our products are performing in the field, what our customers are telling us they want, or what the competition is up to.

This process allows for a dynamic strategic planning process, which is necessary in today's ever-changing global market. We are committed to the ongoing assessment of the business, and we often take new directions and initiatives based on these monthly feedback meetings. Our leadership team is then tasked with communicating the state of the business throughout the organization. All employees worldwide attend formal quarterly business meetings where more of this type of information is shared, including our financial results. We feel very strongly that by sharing detailed information, our employees can make the best, most informed business decisions.
We believe in our employees, and more importantly we trust their ability to personally do what's necessary to satisfy our customers and achieve the business results necessary for our success. We believe our culture of shared decision-making is the hallmark of our success. Doing the right thing for our customers and our business must be left in the hands of widely dispersed employees who are closest to the impact of that decision. Sitting in our headquarters, we cannot possibly understand all the nuances of conducting business in so many different cultures. Decentralization works for us because we are committed to sharing detailed information on a very broad level.

The most important role of leadership is to align and engage employees around common goals and values, and to establish and focus on customer needs. Another aspect of good leadership is being a good corporate citizen. One of the values we are most proud of is our commitment to social responsibility. We have a corporate obligation to support all the communities where we live and work. We have a very particular focus on environmental, health, and safety issues, both in our manufacturing processes and in the products we design and build. We have demonstrated our commitment by making it a part of our strategic planning, and by subsequently developing programs that improve safety, reduce hazardous waste, and minimize emissions. Solar employees support their worldwide communities. Solar employees take the initiative, to find ways to lead socially responsible efforts. In San Diego our 400 member volunteer club participates in over 20 major projects each year.

Strategic Planning

Dave Lehmann—Strategic planning at Solar is an integral part of a dynamic, activity based leadership system. To help understand our approach, consider the three prevalent views of strategic planning. One is our activity based approach. Then there's the view of strategic planning as the study of factors, demographic shifts, and external forces where one looks for emerging gaps and opportunities. We also do this but in a more continuous process rather than a separate study. The third variation is where experts in strategic planning create corporate strategies somewhat in isolation from the work of the organization. We tend to shy away from that approach. We prefer the action based approach because it gives us a quicker response to changes in the direction of customers, competitors, and governments.

Our strategy is captured in our mission statement, which answers three critical questions of strategy for all of us:

1. What business are we in?
   We are a solutions company, not a technology or research driven company. Our products and services meet customers' needs for compression, power generation, and other gas turbine systems and services.

2. What position do we desire in this industry?
Three strategy questions, continued

We intend to remain the world’s leading manufacturer. This is the mantra for all our employees. We are a manufacturer in the context of supplying solutions for the complete lifecycle. We must maintain the capabilities for design and development, manufacturing and service, including operating and even owning the system.

3. How do we intend to achieve that position?

We intend to earn this by our relentless focus on the needs of our customers. This is why our strategic driver is product and service.

Not just who is involved, but how they are involved

Our desire is to maintain alignment and agility in a dynamic market. We intend to do this through the empowered work of our employees. The intent is to create a climate and a culture where constructive social interaction creates greater capabilities for problem solving in all of us. We look to see not only who is involved, but how everyone is involved. We intend to use the knowledge of as many people as we can. We need this to be successful, selling and servicing products in over 80 countries, since more than 75 percent of our sales come from outside the U.S. We must simultaneously incorporate considerations of nine geopolitical regions of the world, face the actions of 19 competitors, and try to anticipate the technological breakthroughs and changing regulatory requirements. Even with our agility, we still have surprises and unforecasted dislocations in our markets. But because of our leadership system, we can realign quickly. Some might say we strive for chaos. However as Margaret Wheatley said, “If you see only chaos you’re asking the wrong questions, because chaos and order are simply mirror images of the same thing.”

Interlocking committees

Our leadership system is actually quite structured. All the elements of traditional strategic planning are here, but the value and activity spawned by their combination is occurring in a system of structured interrelationships of demand management, supply commitments, products and services development, employee skills, and financial management. We use interlocking leadership committees (Figure 2), working together each month to steer the business. Some activities such as setting

![Figure 2. Interlocking Leadership Committees](image-url)
Interlocking committees, continued
critical success factors, long range market forecast, and annual business plans occur less frequently. But they are far from static and are continuously challenged. The leadership committee structure offers the shortest lines of communication supporting rapid decisions by the people who are in touch with the customer. These systems are actually a collection of teams, task forces, subcommittees, and cross-functional work processes where strategies are set, deployed, and assessed. One important benefit is that committee membership is carefully selected based on the challenges for the coming year and the greatest opportunities for employee development. The president and executive staff are members of every top level committee.

An example of critical decisions—understanding the market

One example of critical decisions that set the context for our strategy is understanding the character of our markets. Our markets are mostly affected by preference of thermal efficiency and power. This differs strategically from a truck engine or a marine propulsion unit, where the product would be evaluated on how closely it matches a specific duty cycle. Another example is the analysis of the cost of ownership as viewed by the customer. As a solutions provider we frequently use lifecycle cost analysis to compare the total cost of ownership across a range of power needs. We include costs such as trade-offs between investments and operating costs, inflation, fuel costs, maintenance, and equipment life.

Employee competency

Because we cannot totally foresee the challenges our employees will face, our approach includes specific strategies for employee competency. We have selected seven employee competencies: teamwork, leadership, process management, product and service knowledge, systems, business knowledge, and job knowledge. We feel it is the responsibility of the leadership system to best prepare employees for anything. Our strategy for employee development includes, in addition to participation in the various committees, monthly forums for open discussion of customers, countries, competitors, products and services, environmental forces, demand and supply commitments, technology development, and the financial performance of the business. This is no small challenge, as we have people in 50 locations around the world. But this does give us then the opportunity to set out the expectation that it is important for everyone to have an understanding of the business.

Creating a common language

In today’s environment it’s not just how well you understand the strategy and the business that makes for success, but how well everyone understands and can take the appropriate action. We invest considerable time and energy in these discussions involving up to 450 people at a time, plus we have a set of tools to help in our work. These tools create a common language and a shared approach. The foundations are based on the teachings of Dr. W. Edwards Deming, the Plan-Do-Check-Act cycle, the Baldrige Award Criteria, and empowerment through employee development. One of our greatest successes is the use of the Baldrige Criteria for assessment of
Creating a common language

internal business units and functions. The criteria are applied providing a detailed assessment and feedback report. After a round of improvements, we then conduct a reassessment and the progress is reported in the Process Improvement Council meeting. We've also extended our philosophies to suppliers and some customer alliances. The strategy is to closely align our supply value chain with the customer's needs.

Three levels of supplier relationships

We work with suppliers in four domains utilizing three relationships. The strategy is a function of the dependency. Most of our suppliers are managed in a conventional contract buy-sell manner using tools such as supplier scheduling, certification, and qualification programs. When the competencies can be combined to create a unique, competitive advantage, we try to achieve a teaming, or partnering, relationship. The partnering relationship is best when the dependency is high and our strategies will contribute to the success of the supplier beyond just the value of our purchases. All this is designed to create a virtual capability by combining strengths in a system where both we and the supplier benefit. Most important is that we share our rewards with suppliers, openly celebrate the successes, and work to build trust and integrity. With this approach our mistakes and problems can be discussed with the same openness and with the fewest separate agendas.

An organic process focusing on activities

Our strategic planning system is focused on our activities as a company, with many products and services and challenges worldwide. Our system incorporates inputs and decisions at all levels from everyone. It is an organic process, always in action. We expect everyone to get into the game—customers, employees, suppliers, and investors. We want everyone to feel valued and respected. But let me make one point. This system is designed for a very specific purpose—excelling within a specific market with a medium-width product line. We would change the approach to achieve strategic renaissance when the time comes to look outside our current mission and markets or migrate to a new structural relationship with our current markets. The resulting strategic planning system for that type of challenge would still have at its heart the emphasis on values, involvement, empowerment, and activity. However, the accountability structure would be less ambivalent, less task oriented, and driven more by hypothesis for achieving new visions. This would drive us to opportunities farther from our current mission, and to make larger, more dramatic strategic decisions.

We currently have six strategies for winning (Figure 3). Most of our work is conducted within these as we pursue our mission. These strategies imply action. Our markets and business are global and dynamic, prompting us to think globally and act locally. We're not perfect at this, but so far we are much better than our competition. The strategies must be driven by the actions at the point where we touch the customers, not the other way around.
An organic process focusing on activities, continued

Listening closely to customers and meeting specific needs

Needs assessment through listening posts

Customer and Market Focus

John Porter—The key to our success and future growth is our focus on customer needs. It’s the major focus of our company, and it means focusing on individual markets, each having different specific needs.

We maintain this focus by providing separate distribution and customized products and services for each market satisfying specific needs. We utilize every opportunity we can to listen to the customer. It’s critical to not only understand if current needs are met or exceeded, but that we are correctly assessing and anticipating future requirements as we plan our long term strategy. Attendance at meetings such as the Gas Turbine Users Conference provides a unique opportunity to hold open forum discussions with our customers regarding our products and services. The input from these meetings is invaluable, as it gives us clear guidance on our journey. Conversely, every three years we invite hundreds of customers from all over the world to demonstrate and discuss technology advancements, and to gain input on their concerns and needs. Each meeting is concluded with a survey of all attendees, soliciting their feedback about the seminar and the value of our products and services.

Assessing needs includes the systematic development of present buying criteria for each of the distinct markets we serve, as well as anticipating the future. Information about our customers and their operating environment are gathered through our listening posts (Figure 4), where needs are analyzed and prioritized through integrative processes to improve or develop new products and services. Through concurrent engineering and manufacturing led by our new product introduction team, quality products are developed in short cycles meeting quality, performance, costs, and budget goals. Being close to the customer requires that we have offices worldwide, offering sales, service, construction, and overhaul. To build long term relationships and customer confidence, we believe it is important to be in the customer’s space.
and time. Valuable customer contact opportunities include major trade shows, exhibitions, conferences, and our own turbo machinery technology seminar that draws customers from all over the world. It is essential that all phases of the customer’s transactional needs are satisfied by functions with clear accountabilities. It is mandatory that there are no holes, or miscommunication, in this process.

### Complaint management

A major contributor to building customer loyalty is responsiveness and effective problem resolution. Solar’s customer complaint handling process has two phases. The first is focused on handling and resolving customers’ specific issues. The second phase is focused on aggregation and analysis of input to identify systematic issues and appropriate corrective actions. In handling customers’ specific issues, Solar’s field offices around the world provide close and timely customer support. In general, customer complaints are handled directly between the customer and the field office, with the support of a team of local field service technicians. If complaints fall beyond the capabilities of the field office, they can call in for support from the response center in San Diego. Case managers, the primary contact point within the response center, have access to our customer information network, which holds the complete history of the resolution process of previous complaints. As such, it serves as a research tool to resolve customer issues quickly. Case managers can also enlist the second or third level of support of higher technical expertise to help resolve the issue. When the customer approves the solution, the case is closed (see Figure 5).

The customer information network database on field problems and complaints provides data for analysis on the nature of customer problems. This is input for the second phase of our complaint handling process. We have customer inputs through users meetings, the turbo machinery technology seminars, customer surveys, field

---

**Figure 4. Listening Posts**

<table>
<thead>
<tr>
<th>Listening Post:</th>
<th>Frequency:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Executive Customer Visits</td>
<td>Daily</td>
</tr>
<tr>
<td>• Direct Customer Contact</td>
<td>Daily</td>
</tr>
<tr>
<td>• Alliances</td>
<td>Monthly</td>
</tr>
<tr>
<td>• Gas Turbine Users Association</td>
<td>Annually</td>
</tr>
<tr>
<td>• Turbomachinery Technology Seminar</td>
<td>Tri-annual</td>
</tr>
<tr>
<td>• Regional Users Groups</td>
<td>2-3x / year</td>
</tr>
<tr>
<td>• Customer Satisfaction Surveys</td>
<td>Annually</td>
</tr>
<tr>
<td>• Transaction Surveys</td>
<td>Project end</td>
</tr>
<tr>
<td>• Win/Loss Analysis</td>
<td>All trans.</td>
</tr>
<tr>
<td>• Trade Journals</td>
<td>Weekly</td>
</tr>
<tr>
<td>• Industry Conferences</td>
<td>10-15x/year</td>
</tr>
<tr>
<td>• Industry and Professional Organization</td>
<td>Ongoing</td>
</tr>
<tr>
<td>• Research and Consulting</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

---
input from the managing director’s field sales and service personnel, as well as internal quality performance. The Quality Strategy Team implemented in 1997 aggregates and analyzes these inputs to identify major customer dissatisfiers. After analysis, the team develops and coordinates initiatives to resolve the problems, develops work agendas, and monitors progress (see Figure 6). Beginning with our mission statement through all our processes, down to lower tier measures, the common theme is customer satisfaction. Ongoing customer surveys by all of our major disciplines that touch the customer provide information and metrics. Information obtained through surveys is analyzed and prioritized to help identify specific action items that are incorporated in our critical success factors and work agendas.
CASE STUDY  

Solar Turbines Incorporated, Malcolm Baldrige National Quality Award Winner, 1998

13

Customer loyalty is critical to success

Every customer must be a repeat customer for Solar to be a success. Our approach to business is to build on brand identity, customer loyalty, and long term customer relationships. We do this by offering a superior product portfolio, providing global product support throughout the life of the equipment, our ability to vertically integrate product and services into a complete system solution, being in the customers' space and time, and the development of long term customer alliances.

Customer alliances have been and will continue to be very important to our business. Integrating communications and processes with customers results in mutual efficiency gain, significantly improving quality, cost, and competitiveness for both parties. These improvements are confirmed through metrics justifying the ongoing investment of time and resources in alliances. One of our core business principles gets it right: we earn commanding market leadership, and we have to make sure we earn it every year, every week, and every day.

Information and Analysis / Process Management

Dave Esbeck—Solar Turbine's challenges in this area can be quite different from other companies—88 percent of our costs are in the U.S., and over 70 percent of our revenue is derived from exports to 86 countries around the world. Remember when we were all naive enough to think that computers and e-mail would simplify our lives and reduce the amount of paper we had? I think most people today are struggling with information overload. The challenge is no longer getting information, but being able to rapidly turn the amount of data and information into useful knowledge that can be acted upon quickly. Another key challenge is to make sure we're maintaining a balanced approach when dealing with data, starting with the customer, market, and competitive data, to our employee, supplier, and investor data. There is a direct link between business strategies, information channels, and integrated processes with its corresponding leadership structure, which enables us to rapidly act on the data.

Information is essential to interlocking committees

A key part of our leadership system is the sharing and leveraging of information in our interlocking committees, which share a lot of the same members and president's staff. With our busy travel schedules we dedicate one week per month for these meetings. An example is our Products Committee, a cross-functional group of leaders that sets the direction and monitors product development. This group commits the company's resources. However, we quickly realized that it was unrealistic to expect a group of executives to work through all the data and come to a consensus during monthly meetings. We had to have a way to do our homework and involve the most knowledgeable people down through the organization on a particular decision. Several subteams, such as the turbine product strategy team, were formed. This team is co-chaired by the directors of marketing and design engineering, and its primary charter is to analyze a broad range of data and recommend a
Information is essential to interlocking committees, continued

T he Product Strategy Team performs a detailed analysis of how our products compare to the competition with respect to key customer buying criteria, such as lifecycle cost. The team plots how well our current product portfolio performs versus the competition, then projects where they are likely to be headed, and determines where our product strategy must take us. We regularly review customer buying criteria. This systematic approach leverages our leadership system to turn information into a strategic plan. It provides a foundation for our product development, and is a key aspect of our ability to communicate information throughout our global enterprise. Solar utilizes a number of different systems, including our expanding intranet, HR information system, customer information network, and so on. Sometimes it seems as though we just spent millions of dollars to create a system that operates as fast as our rumor mill!

Using Baldrige criteria to improve process management

As we began using the Baldrige criteria as an internal improvement tool, we reviewed our enterprise approach to process management. We identified seven top level processes, ranging from planning and strategizing to customer support. As we reviewed these top level processes, we found a disconnect between the activities going on within the different functions for the same process. We quickly realized that the challenge is how to integrate the process across functions. You must align them so that they are all working together to accomplish the same goals. In fact, as we looked at this more closely, we found that although each function was embracing improvement, we were focusing on optimizing our own function and not the enterprise. We were often creating process gaps, which is where the majority of our problems were generated. We had to make our functions supportive of and aligned with the top level integrating processes.

New Product Introduction process

For example, our process for product development is what we call New Product Introduction, or NPI. We have been through four cycles of improvement....
and have seen major improvements in cycle-time reduction, product quality, and overall customer acceptance of our products. Benchmarking results have validated that we're on the right track. Our NPI approach is based on four key elements: people, processes, organization, and tools. To create the integration across the enterprise, the NPI process has a cross-functional team for each new product (Figure 8). Each team is accountable for managing the entire business aspect of the project. Through our authority delegation the team is empowered to perform transactions within the scope of their approved business plan. Below the top level NPI team are additional functional teams to involve the required resources to get the job done. We used a phased approach to product development starting with the market requirements and continuing through to production. Building on this foundation of teams and concurrent processes, each discipline utilizes a range of tools focused on automating, validating, and communicating requirements.

Production requirements for engines are organized through the use of certified assembly manufacturing, or CAMS. Work teams are responsible for delivering a certified subassembly product to their internal customers. Simplified workflow enables model line teams to reduce cycle time and variability while maintaining the flexibility required to ensure customer expectations are satisfied.

Supplier involvement is critical. Supplier symposiums provide an opportunity for exchange of information on business objectives and technologies to optimize the supply chain. As integral members of our NPI and manufacturing teams, a few key supplier reps are located at our plants. They are included in the improvement activities such as Kaizen events. We have three classifications of suppliers. A supplier must be approved to do business with us. Certified suppliers’ products are delivered directly to point of use, and partners are those suppliers that are most critical to our strategies to win. Direct customer interface occurs during site visits, Solar sponsored seminars, and our annual User Association meetings.
Supplier and customer alliances, continued

Customer alliances are formed through shared business strategies that ensure consistency of long term requirements and direction. An important part of our process improvement strategy is our use of the Baldrige criteria as an internal assessment tool. Each function or subgroup is assessed in all categories. Rather than create a 50-page application, the groups prepare an assessment room where they plaster the walls and put documentation on tables to show evidence of approach, deployment, and results for each category. They are provided feedback on identified strengths and areas for improvement by an internal assessment team. We see Baldrige as an important milestone in our process, and we're leveraging the feedback as we implement enterprise resource planning and continue with our balanced focus on customers, employees, suppliers, and investors.

Three main points of information/process management

In summary, information must be aligned with your business goals. Second, your processes must facilitate transforming data into useful knowledge. Third, select your few top level processes and integrate them across the enterprise. Fourth, get your customers and suppliers involved in product development early. And finally, consider using the Baldrige process for functions or subgroups to get started on a path towards improvement.

Human Resource Development

Joann Stang—Our employees have created a culture that we call the Spirit of Solar. This clearly differentiates our work environment and starts with our mission statement: Focus on Customer Needs. Our employees are fully engaged at all levels to do just that. We consider continuous improvement as everybody's responsibility. Our work system design and employee development programs encourage team based work systems and we support and trust our people. Achieving this culture has been, and will continue to be, a journey. Key milestones have supported our business strategy and exemplified continuous improvement, with past milestones serving as the foundation for the next PDCA cycle. Some milestones have been broadbased, like teaming and manufacturing resource planning. Some have built upon themselves, like our employee development training program, while some have smaller scope, like the hourly hiring selection system. Others have been building on cycles of improvement, like model line teams following Kaizens, which came after the process maturity model. All of these milestones have been critical in our journey without an end, but with purpose.

Team-based work systems

Our people strategies are integrated with and support the leadership system. These strategies are reviewed annually and validated as critical by HR and the business. All are focused on work systems that fully engage our people. There is a general respect for the value of working together at Solar, and our people see team-based work as a natural way of accomplishing business objectives. We are flexible so
Team-based work systems, continued

that we apply the right work system to fit the situation and the desired outcome. Teams are our means to an end, and that end is to meet customer needs. Team-based work promotes collaboration and communication, and encourages decision-making by those closest to the work. We support our people with training that develops teaming as a core competency.

We believe there is a strong link between our teaming culture and employee motivation and satisfaction. Most importantly, we believe our flexible approach to team-based work drives customer-focused solutions at all levels.

Communication

Communication is critical to work systems. We want our people involved. Everyone is informed of our business goals, results, and competitive challenges. Quarterly business update meetings for all employees worldwide are anchored by a video presentation by our president. This is supplemented by ongoing communication using a variety of electronic and print media. Our communication processes have enabled our people to effectively manage change, and provide a vehicle to recognize people and results.

Enhanced decision-making

Another important supporting work system is our authority delegation process to enhance decision-making. Decisions are made as close as possible to the work performed or customer contact. This improves flexibility and rapid response to supporting customers worldwide, and increases individual initiative and self directed responsibility. The underlying theme to this model is trust, where the employees will make timely, quality decisions, by separating the “take action” from the “due diligence,” to simplify and streamline the actual decision being made.

Compensation

Solar’s approach to compensation is to align individual, team, and company performance closely to achieve customer satisfaction and desired business objectives. All employees worldwide, union and nonunion, U.S. and foreign nationals, receive incentive compensation based on the annual company return on assets. We establish an incentive target that aligns the entire company worldwide to achieve a one-Solar focus. Solar's merit compensation process operates on an annual cycle. Again the approach is to align performance to meet customer and business needs. Work performance is evaluated annually using 360-degree feedback. This review covers job performance including customer focus and satisfaction, interpersonal skills, teamwork and the accomplishment of goals. Merit increases are awarded to set the expectations for future contributions. Employee recognition takes many forms, including key contributor cash awards, and length of service awards. We also recognize our people in our employee communications. The most coveted team recognition at Solar is the annual President’s Quality Award ring, recognizing quality improvement achievement. Also, managers are encouraged to frequently provide informal recognition to teams and individuals.
Education, training, development

Education, training, and development is anchored in a closed loop process that builds on cycles of improvement. Training programs are designed to develop key core competencies and developmental needs are identified through broad-based gap analysis. This approach has led to the building and improvement of the identified workforce competencies over time. Feedback is used extensively to make continuous process improvements, and outcomes are measured as indicators of business excellence. Employee development has now broadened into a people development strategy that links the role of employees and managers to development tools and programs. This assures a pool of well-prepared candidates for critical positions.

Social responsibility

Our core business principle on social responsibility sets the direction for providing a safe and healthy work environment. The strategic goal is to focus on environmental, health and safety performance to aggressively move toward having zero injuries. This prevention-based, proactive approach assures that our environmental, health, and safety goals are a significant component of the top tier business measures. The foundation for this prevention-based approach is the involvement of our people through training and awareness, proactive compliance systems, and safety teams. Our people are fully empowered to be responsible for their own safety and the safety of those around them. Solar creates a pro-employee work environment by providing comprehensive and varied benefits and support services like wellness incentive programs and fitness centers. This helps attract and retain employees, and it helps encourage our existing employees to maintain good health. We also encourage our people to participate in the communities where they live and work. Another important component is how we listen to our employees, by asking them what they want and need, and then acting on it. The annual employee survey is not a single event, but a way of focusing employees and managers worldwide on continuous improvement.

Here are some numbers to give you an idea of the significant benefits from this process. The number of employees surveyed in 1998 more than doubled that of 1995. The response rate more than tripled. The number of manager subgroups receiving specific feedback has increased by 400%. Actively working the issues has significantly increased the participation of employees and enhanced our listening and learning capabilities. All of the elements discussed this morning are vital to achieving the Spirit of Solar. Strategies provide the foundation for our commitment and focus on customer needs. Our employees are supported, educated, and encouraged to take risks and learn by doing. Continuous improvement and cycles of growth are an expectation. This all adds up to Solar employees who are empowered, engaged, informed, enthusiastic, team players and highly skilled. It's the people who are the Spirit of Solar.
Business Results

Cecilia Scott-Stanfel—One important factor in achieving our business results has been the development of a balanced performance measurement system. Our balanced scorecard shows data on customer satisfaction, employee involvement, supplier teaming, and investor expectations.

In 1995 our business had strong financial measures but a less robust process when it came to nonfinancial measures. The needed balance was not there. In response to feedback from state quality award applications, we initiated a cross-functional team to lead us through the improvement steps. We had already identified our top tier measures. However, we had not tied them to our core business principles or critical success factors.

The balanced scorecard underwent improvement in 1997. First, we assigned clear senior-level accountability for each top tier measure, and then we recognized that not all top tier measures are applicable to employees at all levels. This led to a structured process for identifying lower tier measures that linked to and supported our top tier measures. Our top tier measures are monitored on a monthly basis during the review meetings of our leadership committees. Trends are monitored and corrective actions are initiated during this process. The other key improvement was the use of benchmarking and comparative data. What we thought was a stretch target was not always such a stretch when we compared ourselves externally.

Measurement process

Solar’s top tier measurement process is a perpetual cycle. It is an annual process starting with strategic planning, proceeding to establish the performance targets, and then to deploy these targets throughout the business at various levels. Finally, we have the results. This process is perpetual because it is closed loop, with further planning depending on previous results. The PDCA cycle prevails. There are lower level, shorter term, closed loops at every juncture, and of course, comparison of actual results to our targets initiates midcourse corrective actions. Every year, Solar revisits its core business principles, critical success factors, and top tier measures in order to see if adjustment is necessary.

Customer satisfaction survey results

Our results in the customer satisfaction category are shown in Figure 9. Flexible aftermarket support is critical to help our customers achieve maximum equipment availability and minimal lifecycle costs. Therefore, we seek feedback via periodic customer satisfaction surveys. The primary components measured are overall customer support, service parts fill rates, field service, and exchange engine availability. As part of a continuous improvement program, we have been driving accountability down to the point of action. The introduction of new work and measurement systems together with multiple improvements to the velocity of our overhaul processes have resulted in major reductions in our response time to customer’s requests for exchange engines. Various initiatives focused on keeping our
technicians up to date with the fast changing technology has helped them better support our customer needs. All of these improvements are reflected in a positive trend in our customer satisfaction rating for overall customer support.

While we have achieved a leadership position in our industry, our challenge is to be viewed by our customers as the best supplier of products and services. Our continuous efforts in this area have resulted in almost twice as many customers rating Solar as the best supplier in order handling. Customer satisfaction surveys are reviewed by our Quality Council, where action plans are developed to follow up on customer feedback.

Our primary barometer by which we measure our success within our marketplace is called Percent of Industry Shipments, or PINS. Through focusing on customer needs and with an aggressive strategy for the development of a superior product and service portfolio, we were successful in establishing Solar as a leader in the market of midrange industrial gas turbines, and tripling PINS over the last decade.

**Employee involvement**

Since the heart of our business is our people, we need to focus on employee involvement results. Our employee survey results are a positive reflection of the satisfaction and well-being of our employees. The feedback shows that an increasing majority of employees, both in the U.S. and internationally, continue to recommend...
Employee involvement, continued

Solar Turbines Incorporated, Malcolm Baldrige National Quality Award Winner, 1998

Solar as a good place to work. We believe that ensuring a cohesive customer focus throughout the organization requires consistency in goals to support the company core business principles and critical success factors. This focus is enabled through the deployment of goals down to the individual contributor level. Our survey results reflect continued improvement with employee identification with these goals. One of the critical success factors that supports the core business principle of social responsibility addresses the safety of our employees. To monitor this we measure the frequency of injuries, which is declining. We are also a leader in environmental responsibility, and we have seen tremendous results of our hazardous waste reduction program. Waste has been reduced to 1/5 of the 1993 level. Solar is promoted by the environmentally-conscious state of California and regulatory agencies as a model company.

Our success is the result of the commitment and dedication of our Solar employees. To recognize this we share the financial success of the company with our employees, and performance payout dollars have increased over the years.

Supplier involvement

Partnering with external suppliers is a key to providing quality product to our customers. In the early to mid 1990s our primary initiative in supplier management was centered around reducing Solar's supplier base. The number of and percent of total dollars expended with certified suppliers increased significantly. This change had the advantage of stronger relationships with a smaller number of suppliers as our business grew. Supplier defect rate is measured on a percent yield basis. To measure the effectiveness of the supplier certification program we began distinguishing quality levels between certified and noncertified suppliers. Both are performing well above 99 percent. Forgings and castings are critical to the performance of our gas turbines, and they have had consistently long lead times. Solar built partnerships with these suppliers to significantly reduce the lead time. We have applied lessons learned from these commodities to others, resulting in a decrease in overall manufacturing time.

Our cost of quality is measured by collecting preventive, appraisal, and internal failure costs such as scrap and rework, and aggregating them with external failure costs, such as warranty, to determine the total cost of quality. We also monitor proactive quality and process improvements, and this effort has resulted in a decrease in the cost of quality.

Long-term viability demanded by all stakeholders

Solar's long-term viability is very important to its customers for a number of reasons—the lifespan of turbo machinery equipment, the size of their capital investment, the critical need for service and equipment availability, changing governmental regulations, improvement in fuel consumption and energy conversion, and changing technology. All of this means that Solar must continue to invest in the business.

To meet investor expectations let's take a look at what Solar focuses on and
Long-term viability demanded by all stakeholders, continued

how we have done over the past decade. Sales volume growth not only demonstrates an element of customer satisfaction, but it provides the necessary mass to serve our customers effectively and fund the required development. Solar’s sales have more than tripled in the last decade. At the same time we have seen significant improvement in the assets employed to generate these sales and serve our customers as our asset turnover has doubled. Sales growth is very good, but we also need to look at some measure of efficiency. One important measure that we monitor is Sales Per Employee (Figure 10). We have been tracking this since 1991, and through 1998 we have seen the factor increase by over 60 percent. Profitability is key to measuring our performance, not only as an absolute number, but in relation to the assets that it takes to perform the business. For 1998, profits were up 13 times compared to 1988.

Return On Net Assets has shown better than a six-fold improvement, and Return On Sales a better than three-fold improvement. However, people remain our most important asset, and we look at profit per employee as another key measure of efficiency. Since tracking this measure in 1991 we have seen it increase by 90 percent.

Our positive results have enabled us to continue to invest in our future by funding new product development and capital assets required to grow and to respond to our ongoing customer needs. From 1991 through 1998, Solar invested more than 10 percent of its sales dollars in innovation and in our future, even while total sales increased greatly. Solar is well positioned to respond to the customer needs and the opportunities of the new millennium. We intend to continue to support our customers as an integral partner in their supply chain. We anticipate continued strong growth, especially as a result of the emerging distributed power generation market. Our Baldrige quest for improvement will continue.

Journey to Performance Excellence & Lessons Learned

Larry Winegrad—Our journey began in the late 1980s when our performance was anything but stellar. In fact, it was taking us a dollar in assets to achieve a dollar in sales. Things were so bad that we had a building in our components product business that was dedicated to storing our red tag discrepancy material. We called it
Humble beginnings, continued

the Red Sea. Whenever we were short a piece in production, someone would go part the Red Sea and find a reworkable replacement. Worse, no one felt really compelled to change the inefficient way that things were being done, as it was everyone else’s problem.

Visionary leadership was the catalyst for change

Our company began to change largely because of a single thing: visionary leadership. We’ve been blessed by a succession of excellent leaders who could see a better place and improved business with happy customers and happy employees, good relationships with suppliers, and respectable return for our investors. These leaders energized the transformation of our company into a successful one where it’s fun and rewarding to work. They did it by creating a sustainable culture of continuous improvement, where everyone feels responsible for improvement and is involved in achieving high performance goals. The overall attitude was changed from one of accepting things as they are to one of realizing that we needed to and could do a whole lot better.

Alignment toward a clear target

Critical to those first steps was the alignment of people and their efforts around a clear target of satisfying customers and winning in our global marketplace. The establishment of our mission statement and core business principles helped us to focus on what was important and to develop clear strategies to win every day. Next, our people were fully engaged in the business of developing and executing those strategies, as ownership and involvement spread throughout the company. Systems to support effective decision-making closest to the work, and focused on customer and business success, were implemented along with increasingly high performance objectives. Everyone shared in both the accountability and the rewards for achieving these targets. The change in the way we ran our business was palpable, as ownership and passion for success deepened.

In a few short years we had transformed our workforce into a dynamic, focused, committed group of people, fully engaged in winning and embracing their roles in making it happen. We established systems and processes designed to communicate progress and coordinate efforts. These were designed to set a context for review and redirection of efforts if necessary. We shamelessly celebrated each and every success along the way, and found the drive becoming endemic to our culture. We made a decision in 1991 to achieve both ISO 9000 and MRP II Class A Certification; the first for market purposes, and the latter to drive operational excellence. Both of these efforts required external review and validation. And we found that nothing breeds success better than success itself, with our constantly improving results adding fuel to our drive towards being the best.

Some small successes along the way

By 1995 we had some remarkable accomplishments to indicate we were on the right path. Our Sales more than doubled, our marketshare, Revenue Per Employee
Some small successes along the way, continued

and Quality Yield had almost tripled, and our Assets To Sales Ratio, which was dollar for dollar in 1988, was now at 64 cents of assets for each dollar of sales. Everyone was energized and shared in the rewards for these achievements. We then employed another external check as we decided to apply for the California Quality Award, which is modeled closely after the Baldrige process. We did this with minimum realignment of our efforts, by simply putting down on paper what and how we were doing things compared to the Baldrige criteria. We won this state-level award, but more importantly, we received and responded to the valuable feedback we obtained.

Expanding our efforts with Baldrige

Then a significant event occurred, as the decision was made to adopt the Baldrige criteria and process for our internal certification efforts. We developed and implemented a systematic approach to assess organizational units against the Baldrige criteria, utilizing the award process as a model. Key elements include the use of cross-functional team of trained, independent, internal assessors looking for evidence of deployed systems, balanced results, and cycles of refinement. A feedback report including strengths and opportunities for improvement for each item is delivered at the end of the assessment process which is used for strategically targeted advancements by the assessed organization.

This process is designed to be done from start to finish in a matter of weeks, not months. The feedback report contains a score as well as strengths and areas for improvement on each of the 20 items of the Baldrige criteria. HR is not only assessed on category five, Human Resources Focus, but on all seven categories. This is true for every unit or group that is assessed. Results from the implementation of this process included an improved focus on customer satisfaction, an increased understanding of the Baldrige criteria, and the creation of a group of experienced and knowledgeable people familiar with the Baldrige process.

As our experience grew, more people began to see the benefits from these assessments and the alignment of the organization around a common model and process for identifying areas for further improvement. Then in late 1997 we decided to apply for the Baldrige Award. We formed a team from across the organization and pulled together data and evidence in support of our application, which was submitted on June 1. Our goal was clear—to receive a site visit. We knew that the feedback would be more robust given an onsite visit, and we knew we couldn't win without a site visit. Four months later, we got our site visit, which was another intensive experience. The examination team works really hard, and I’ve had the benefit of that experience myself. But it is a lot easier and less stressful being the “squeezer” rather than the “sqeezee.” The site visit ended successfully, and we had another long wait before receiving the call from the Secretary of Commerce notifying us that we had won. We celebrated extensively, but then quickly came back to earth as the new challenges facing us this year demanded that we keep things clearly in perspective.
Critical steps leading to success and achievement

What were some of the critical steps that propelled our transformation and fostered the success and achievements that we have attained? First was having the courage to start and stay on the journey towards continuous improvement. In this regard there is no effective substitute for visionary leadership with clear values and high performance expectations. It’s hard to imagine where Solar would be today without the leaders we’ve been fortunate to have. Good leaders must align everyone’s efforts around a clear definition of success. We established that early with our focus on customer and business success. We got our employees involved in owning and running the business, and this is where the excitement builds, the fun begins, and the results start rolling in. There is simply no way that superior results can be achieved without a fully engaged and empowered workforce. The test of this was during our national site visit when the examiners visited and talked with people from our worldwide facilities. They video-conferenced with several of our international locations, and even spoke by telephone with some of our field service personnel. Invariably the examiners were impressed by our people performing their jobs with dedication, enthusiasm, knowledge, and professionalism wherever they were located.

Finally, everything must be kept in perspective. The journey of a thousand miles begins with one step. You try different approaches, some work better than others. But during the journey you can never lose sight of the goal to become and remain the best supplier to your customers. That journey never ends. It becomes a way of life, an internal business culture, and a clear driver for sustained results. This is the type of culture we have tried so hard to create and sustain at Solar. It helps us keep our eyes on the ball, and enables us to achieve ever-increasing levels of customer satisfaction and business results.

Dispelling common myths about the Baldrige Award

There are many myths and misunderstandings about the Baldrige that I’ve heard over the years. Myth number one is often cited as an excuse for not using the Baldrige criteria process, and that is that you’ll need to make some significant changes in your organization. The reality is that you can successfully adopt the criteria and process for use as a tool, and just like any other system or process, the key will always be to make it meaningful to people in the organization, or it ultimately will not be embraced. People have to see real benefits in their daily work in order to participate in any improvement effort, and the bottom line, and rightfully so, is that it will have to lead to tangible and visible results important for your organization.

The second myth surrounds this whole issue of winning the Baldrige and the guarantee of future success. Well, nothing can truly guarantee success in the future, and keeping a clear focus on meeting the ever-changing needs of our customers will always be critical in our business or in any other. However, solid approaches and well-deployed systems will usually win, especially when coupled with a culture that is supportive of continuous renewal and improvement, which is what the Baldrige is
Dispelling common myths about the Baldrige Award, continued

There's also a myth about the application process that says you can finesse your way through it. Not a chance. First, you have to have a clear and well-stated understanding of your business in order to even begin. That becomes the minimum ante for any company that decides to apply, and this alone drives the realistic assessment of the critical success factors based on your particular customer and market focus needs. This is both a real and a revealing exercise for any business. From there the process is simply too robust, with review by 14-15 independent examiners and a rigorous consensus and site visit process. Plus, almost half the point score comes from results that are critical to your business success, and evidence, not testimony, is required in support of these results.

The final myth that I would like to clarify is that winning awards can breed complacency. The reality is that if your main focus is satisfying your customer and all your other constituents, this won't happen. Plus, I don't know about you, but the dynamics of our business and global market conditions keep us on our toes, and the feedback and knowledge that we gain from these assessments helps us to define further improvements and ongoing cycles. The need to continue to get results this year, next year, and on into the future, just doesn't allow for any complacency at all.

In conclusion, there has to be a hunger and drive for continuous improvement in the organization. Accepting things as they are is not an option. Turning the need for change into a positive that everyone is embracing and sharing in the results is imperative. Our customers and other stakeholders will not allow us to stand still or grow complacent. Have fun, have a little courage, get results, celebrate, and then do it all over again. I believe that people are most fulfilled as individuals when they are striving for something great. I know that many readers are quality practitioners. That is a consortium of idealists and optimists. Don't ever lose your drive, your edge, or your passion to see things get better. Continue to fight for continuous improvement regardless of where you work. I can assure you that the people of Solar will likewise strive to live up to the honor of being named a Baldrige winner and to face all the challenges that we will have in the future.

Finally, it is the people who make things happen. I believe this is true for all Baldrige winners, past and present. You must have the systems in place, they must be continuously evaluated and improved, and you must have results. But it's the people who make it all real. This was our secret weapon during the site visit when the examiners visited and talked with our employees. All the words, data, charts, all came to life with what we call the Spirit of Solar. The biggest reward in being named a Baldrige recipient is the recognition that it brings to the thousands of employees, past and present, who have built this company into what it is today. Solar Turbines is indeed a special and exciting place to work.
Author information

Gary Stroup was named President of Solar Turbines in November, 1998. He began his Caterpillar career as a Machine Shop Trainee in 1972 and worked in increasingly challenging positions at the East Peoria facility until being appointed Assistant Director of Manufacturing for the General Offices and the Transmission Business Unit Manager in 1990. He was named a Vice President of Caterpillar in 1992, and headed the Construction and Mining Division and the Components Products Division before assuming his current chief executive role at Solar.

Gary received his Bachelor of Science degree from Bradley University and an Executive MBA degree from the University of Illinois.

Dave Lehmann joined Solar Turbines in 1981 as Vice President of Market Development and also held Director positions in Customer Services and Product Engineering. In 1990 he was appointed Vice President of Manufacturing and is responsible for gas turbines, compression systems, power generation systems, fabrications, recuperators, and control products.

Dave earned his Bachelor and Master of Science degrees in Mechanical Engineering from Villanova University, and his MBA and Ph.D. degrees from Claremont Graduate School.

John Porter joined Solar as a Sales Engineer in 1965, opening a new office in Denver. Over the next several years he held sales and service management positions in Los Angeles and New York. In 1973 he relocated to London having responsibilities for sales and service through five offices in Europe, the Middle East, and Africa. In 1978 he relocated to the home office in San Diego, holding various manager and director positions until appointed Vice President of Sales and Marketing in 1994.

John received his Bachelor of Science degree in Engineering from the Pennsylvania State University in 1960, and is a Registered Professional Engineer in Colorado and California.

Dave Esbeck joined Solar Turbines in 1983 as Director of Project Management. His Solar experience also includes Managing Director of the Asia Pacific region and Director of Business Development. Dave was promoted to Vice President of Engineering in 1994. Prior to joining Solar he worked for the General Electric Company for 15 years, with sales and marketing responsibility in various domestic and international regions.

Dave holds a Bachelor of Science degree in Mechanical Engineering from Iowa State University and an Executive MBA from Stanford University.

Joann Stang has led the human resource programs and activities for Solar’s worldwide operations and 6,000 employees for the past five years. During this period, the highly engaged workforce has positively influenced business performance. Joann joined Solar in 1979 and has held various HR positions of increasing responsibility. Prior to joining Solar, Joann lived and worked for six years in the Middle East and South America.

Joann holds a Bachelor of Science degree from Catawba College in North Carolina and a Master of Science degree from Purdue University.
Cecilia Scott-Stanfel began her career at Caterpillar Inc. in 1975 and has held a variety of financial positions ranging from Inventory Accountant to Business Resource Manager. Her 24 years of experience include working with five different Caterpillar business units. In 1998, she was appointed to her present position as Chief Financial Officer at Solar Turbines, Inc.

Cecilia earned her Bachelor of Science degree in Accounting from Southern Illinois University, her Masters in Business Administration from Lewis University in Lockport, Illinois, and attained her certificate in management accounting (CMA).

Larry Winegrad is responsible for the targeting and improvement of Customer Valued Processes at Solar. He also leads and coordinates all Baldrige activity across the company. He began at Solar 25 years ago and has held various management positions in materials, shop operations, and quality. Larry is a senior examiner with the Malcolm Baldrige National Quality Award and a judge in the California Quality Award program.

Larry has a Bachelor of Science degree from Drexel University in Philadelphia and an MBA from the University of Redlands in California.

Editorial support for this article was provided by Michael Clark.
Procter & Gamble and Wal-Mart: A Benchmark in Customer/Supplier Relationships

Author

Tom Muccio, Wal-Mart Global Customer Team Leader, Procter & Gamble, Fayetteville, Arkansas

Introduction

This article will briefly share the background and highlights of the Procter & Gamble / Wal-Mart customer/supplier relationship. My hope is that by sharing this story, you will see how we transformed an adversarial situation into one that’s become a model for other industries.

An overview of the Procter & Gamble / Wal-Mart relationship and its history

Wal-Mart’s size and importance to P&G cannot be overstated. To give you some perspective on this, I’ve highlighted some key data that will show how Wal-Mart is a dominant player in the consumer retail market:

- $118 billion in sales (FY ended 1/98)
- 1900 U.S. Discount stores
- 444 U.S. Sam’s Club stores
- 440 U.S. Supercenter stores
- 45+ distribution centers
- 427 international outlets in eight countries
- 805,000+ employees worldwide.

Today, P&G does over $4 billion in sales with Wal-Mart, which accounts for more than 10% of our global business. We are their largest supplier, and they are our largest customer. Our market shares with Wal-Mart exceed our in-country market shares in every country where Wal-Mart operates. The cost of working with Wal-Mart is well below our average cost, no matter how we measure it. There is a high level of trust and open sharing between our two companies. There is also a high level of innovation between the two companies.

A rocky start to this relationship

Sounds ideal, doesn’t it? Well, it didn’t start out that way. I’ll go back a few years to give you the history and background on how this relationship developed over time. The Procter & Gamble / Wal-Mart relationship actually had two begin-
A rocky start to this relationship, continued

P&G was a fragmented organization

Total Quality and other new initiatives

Procter & Gamble had organized its selling organization to align with its 12 different internal product divisions. We had a sales organization that represented our detergent business. We had another one that represented our toilet soaps and household cleaning products, another that represented beverages, another for foods, etc. The net result of this organization structure was a selling organization that was very knowledgeable about its own product categories and internal needs, but one that didn’t know much about retailing.

The 12 product divisions were each organized in a geographic military model with 80% of the resources focused at retail stores.

Each of these 12 divisions had their own policies, procedures, and interpretation of company direction, and our customers had to interact with each of the product divisions almost as if they were independent companies. In fact, it was not unusual for five or six different P&G sales people to be at the same customer headquarters or retail store at the same time.

Also during this time period, Total Quality was the new buzzword in American industry, and Procter & Gamble commissioned Dr. W. Edwards Deming to design a 2-day Total Quality course for every manager in the company, from the very top all the way down. The concept seemed right, and the new vocabulary was fun to throw around, but it required a slow build to get any meaningful results.

About the same time, our senior corporate officers had launched several bold organizational initiatives that were designed to get the company back on its historic growth track.

The first of these initiatives was the combining of our Manufacturing, Engineering, Buying, and Customer Service functions into one organization, called Product Supply. This was expected to reduce our costs and improve our speed to market.

The second major initiative was breaking the company into smaller business units led by Category General Managers. The opportunity here was for increased customer focus and improved speed to market.

Another initiative from our senior management was the commissioning of a multifunctional team, to study the P&G/customer linkage and determine how we should go to market in the Year 2000 and what preparation and decisions would be required to get us there.

This multifunctional team spent almost six months studying all aspects of Procter & Gamble’s operation: our competitors, our industry, companies in nonrelated fields, and predictions of future trends. They used Total Quality thinking
Total Quality and other new initiatives, continued

to guide their progress. The report back to the company was very candid and controversial, and their recommendations had broad implications on the way P&G should be doing business.

Multi-functional team findings—two different companies

Their basic finding was that we weren’t one company, but actually two different companies—one internally and a totally different one externally. Our management of P&G brands in complex internal business systems was typified by:

- Strategic leadership and shared objectives
- Team work, collaboration, and focus
- Systems understanding and alignment
- Multifunctional expertise
- Shared resources.

However, our management of P&G brands in complex external business systems was typified by:

- Tactical competition between divisions
- Conflicting objectives and policies
- Lack of systems understanding and growing misalignment
- Extremely narrow expertise
- Inefficient “wholly owned” resources.

The Retailer/Manufacturer Business Relationship

I will highlight the kind of business relationship our external actions were generating with customers. Generally, customers looked at P&G in a negative fashion.

Adversarial

- Customers didn’t like doing business with us.

Transactional

- Trip-to-trip buying and selling
- No long-term planning process
- Multiplied times 12

The P&G system of total divisionalized management was a burden to our customers and reduced the leverage opportunities for P&G. In our own organization it was remarked that in creating the divisionalized selling structure, P&G had in effect dismantled a Mercedes to make 12 bicycles.

Internal Process Focused and Driven

Our business processes were internally focused and managed, and they were supported by a strong recognition and reward system that reinforced the internal focus. Said another way, our retail and wholesale customers’ needs and issues were
Customers' views of P&G, continued

not adequately considered within the Procter & Gamble system of the day. We knew why we did things and why they were good for us, and we didn't really care what their impact was on the customer.

Relationship and Activities Managed by Buying and Selling Function Only

Most companies are organized with a full complement of multifunctional resources. They have finance, management systems, distribution, marketing, sales, general management, etc. That was the way Procter & Gamble had successfully run our business, and that's the way all of our customers successfully ran theirs. Yet, the interface between Procter & Gamble and their retail customers was driven by the seller/buyer relationship only.

Recommendations to fix the problem

Our multifunctional team shared its recommendations and cautions with our senior management:

• If the same management principles and approaches that allowed for P&G’s internal success and alignment were focused toward the customer, we should get better business results and a better business relationship that was simpler, more aligned, more flexible, and more profitable for both parties.

• Given the issues involved and the scope of change required, any serious effort to fix the system would be a commitment to reinventing the company as we went along. We didn't know what we didn't know.

• Where important change happened in industry, it was typically led by smaller groups of people who were empowered to cut through corporate bureaucracy, make recommendations for change, and then help the balance of the organization to value these changes and institutionalize them.

A Transition from a Rocky Start to a Successful Relationship

Now let's switch for a moment to the external beginning of the P&G/WalMart relationship that I referred to earlier—the relationship with Wal-M art. First of all, the early relationship between P&G and Wal-M art was not a good one. An example of this discord occurred in the mid 1980s, when Wal-M art had decided to award Procter & Gamble their prestigious Vendor of the Year Award. Sam Walton, the president of Wal-M art, called P&G’s corporate offices to discuss the details of the award and invite senior management to the award ceremony. At that time, P&G senior management was totally focused on the internal running of the business, and customers were something that the sales organization was responsible for managing.
Walton couldn't connect with P&G, continued

When Sam called, he was transferred five or six times within our headquarters in Cincinnati in an effort to find someone to take the call, and Sam never did talk with anyone who could represent the company—frustrated and confused, Wal-M art decided to give the award to a different vendor.

VP of Sales adds a new perspective

About this same time, P&G appointed a new Vice President of Sales who had been the General Manager of our Philippines subsidiary for five years. The new VP had been out of the U.S. for awhile. When he returned, he got together all of the 12 National Sales Managers for the various product divisions for a meeting. During the course of the meeting, he said he noticed that Wal-M art was now our fifth biggest customer, and he couldn't remember their even being in the top 20 when he left the U.S. five years earlier. He went around the room and asked who could give him information on Wal-M art.

All 12 of our Sales managers fidgeted in their chairs and bent down to tie their shoes to avoid having to admit that they didn't know very much about Wal-M art. Why wouldn't 12 National Sales Managers know much about their fifth largest customer? P&G managed its business by geography, not by customer, so they could have talked about the dynamics of the Los Angeles market, or the New York market, or the Miami market. With Wal-M art hidden in Fayetteville, Arkansas, a relatively small geographic location, it really didn't appear on their radar screens.

A canoe trip that changed the relationship

The new VP decided to take the situation in his own hands, and he called a childhood friend of his who was also a good friend of Sam Walton's. He asked his friend if he could arrange a meeting with Sam to get to know him better and understand Wal-M art's philosophy and direction. His friend indicated that Sam and his wife took an annual group canoe trip, and he would get him an invitation.

On that canoe trip after dinner one night, as they sat by the campfire, Sam indicated that he thought it was a shame that despite the success P&G and Wal-M art enjoyed as individual companies, the relationship between the two companies was terrible. Sam indicated that his buyers felt that dealing with P&G was one of the hardest things anybody was asked to do in life, and Sam was sure that P&G felt the same way in return.

He went on to say that we had substantially overcomplicated the buyer/seller relationship and that P&G really ought to look at Wal-M art stores as an extension of P&G. And, if we thought about his stores as an extension of our company, the relationship between us would be substantially different.

New efforts in Deming course and Total Quality

The thought of Wal-M art stores being an extension of P&G has become the cornerstone of our relationship together and for P&G's desire to work with all of its customers in a way that "exceeds our joint customers' expectation."
Sam expressed interest in P&G’s pioneering work in the area of Total Quality, and Sam and his Executive Committee were invited to Cincinnati to go through our 2-day Total Quality seminar. So, a plane-load of Wal-Mart executives flew to Cincinnati and met with a group of P&G executives, and together they went through a Total Quality course identifying opportunities and outages in the manufacturer/retailer relationship.

At the conclusion of the seminar, Sam stood up and said, “Okay, let’s do it.” A quizzical look came from the P&G group, and finally someone said, “Let’s do what, Sam?” Sam responded, “Let’s do this Total Quality thing between our two companies.” Our senior executives promised to get back to Sam; and, once he left, they huddled.

Anybody who has worked with Procter & Gamble for any length of time knows our reputation. We pride ourselves in thoroughly testing everything we do, and there was certainly a concern about trying to radically change the business relationship with our fifth largest customer. We would have felt much better with a smaller prototype of the idea, like doing it with Bob’s SuperValu in Des Moines, Iowa.

The problem was there was now a lot of corporate ego on the line, and how would we go back to Sam and tell him we weren’t willing to take the same medicine that we had just given to him and his senior executives at our Total Quality seminar?

The next challenge that faced the Procter & Gamble senior executives was what do we do to get started in this new relationship? That’s where the work of the internal P&G team that I described earlier and the external conditions came together.

One day the group who had worked on defining how P&G should go to market in the Year 2000, were presenting to our senior executives the findings from the internal P&G team and recommending that we go forward to prototype our ideas in the real world. The next thing we knew, our merry band of associates was sent to Fayetteville, Arkansas, to take this theory and turn it into a reality.

The Next Phase in the Relationship—1987-88 Strategy

Here are the strategic choices that the company had agreed to which enabled us to move forward:

- Establish a company-to-company relationship with category/functional expertise, rather than the old independent division approach.
- Manage the business multifunctionally, rather than with just buyers and sellers.
- Take a look at the entire system that gets raw materials through to finished
products in consumers’ hands and challenge the status quo with new thinking throughout the system.

- Regular reporting sessions to the top management of both companies to report progress, identify barriers, and get permission to move to the next level.

**Vision**

In fact we had started on a Journey to Success. We were using all the functions to run the company, and our next step was to come up with a defining vision. We had two elements in mind: The vision had to be big enough that we didn’t know how to do it yet, and it would be worth it if we achieved it. There were a number of sub-elements to the vision, and I’ll share a couple just to give you a feel for how it read:

- Both Wal-M art and P&G work together on the assumption that the business and administrative problems they experience together or separately reflect the existing systems that produce them. Consequently, they know that if they expect to improve upon the output of these systems, they first must understand these systems and then move to change and improve them together.

- Before either Wal-M art or P&G moves to make a significant change in systems or procedures which they know will likely affect the other or both companies, they consult each other and gather sufficient data prior to making any decision to change.

**Mission**

We also needed to establish a mission for this new relationship, which needed to have reference to both companies, look at the long term, have a total system perspective and focus on the customer. It reads as follows:

The mission of the Wal-M art/P&G Business Team is to achieve the long-term business objectives of both companies by building a total system partnership that leads our respective companies and industries to better serve our mutual customer—the consumer.

**Determining operating principles**

We needed to set our principles for how we would operate, including:

- Rules of engagement
- How to handle issues before they’re issues
- How to disagree without being disagreeable.

It’s not what you don’t know that hurts you—rather it’s what you know that’s not so, that does the damage.

**Establishing a common language (foundations of Quality)**

We used the following principles when looking at a common language:

- We didn’t refer to P&G or Wal-M art, but simply Total Quality principles
CASE STUDY

Procter & Gamble and Wal-Mart

Setting a strategy for a new direction, continued

- All the work is a process, and 80% of all errors are a result of the design of the process, not people errors
- Improving the quality of our work processes drives cost out of the total system
- We are all customers and suppliers of each other
- Alignment of customer needs and supplier capabilities is key
- Continual improvement (products and work processes) is required to achieve customer satisfaction and competitive advantage
- A single department working alone cannot improve the total system

Multifunctional project management between the two companies

We began to identify projects, owners, team members, goals, action plans/next steps, and measures.

Monthly operating reviews

Each month we would look at our operations in terms of progress, resources needed, barriers, and learnings.

What the teams worked on

On a macro level, the team worked very hard on:
- Increasing customer/consumer satisfaction
- Improving market position
- Improving efficiencies and reducing cost
- Simplification on day-to-day business
- Improving department/category profitability

Results

Results were broadbased and exceeded the most optimistic expectations for both companies:
- More volume
- Higher shares
- More profitable
- More capacity
- More precision
- Simplified business process
- Lower costs
- Better service
- Closer to consumers
- Inventing the future
- Better people development.
While extremely successful—there were still major issues we wrestled with:

- Identical concerns registered by both senior management teams.
- Each party believed that the other was getting the best of the relationship.
- We were concerned about leveling the playing field for our competition.
- There were confidentiality concerns.
- We were better at representing the other company's point of view internally than representing our point of view externally.

This new relationship is still somewhat awkward for both companies, making it hard to work on more substantive issues. A lot of people need to get in the boat to make a change.

There were concerns about senior management direction and commitment, in terms of the scope of the relationship and specific expectations and review processes.

There is an interest in expanding the relationship to other areas of mutual interest to both companies. This would include working together on:

- International expansion
- Establishing/managing joint ventures
- Recruiting, training, and retention
- Functional benchmarking
- Environment management
- Employee benefits
- NAFTA
- Total Quality
- Public relations.

Figure 1 below shows some of the top line results of our relationship of the ten years we've been working together.

<table>
<thead>
<tr>
<th></th>
<th>1988</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>$375 Million</td>
<td>$4 Billion +</td>
</tr>
<tr>
<td><strong>% of P&amp;G Sales</strong></td>
<td>3%</td>
<td>10% +</td>
</tr>
<tr>
<td><strong>Share</strong></td>
<td>Below nat’l average</td>
<td>Above nat’l average</td>
</tr>
<tr>
<td><strong>W-M Profit Margin</strong></td>
<td>Loss</td>
<td>Gain</td>
</tr>
</tbody>
</table>

These results clearly demonstrate that the P&G/Wal-Mart relationship has genuinely helped our companies achieve much improved business results. Innovation, improved operational effectiveness, and a solid mutual business strategy helped us achieve these. A point to remember, however, is that the basis began with dissatisfaction and a misunderstanding of our customer requirements.
Success is based on mutual trust

To a very large degree, success is a matter of trust. It also depends on respecting the needs of customers, consumers, suppliers and others, and treating them as we want to be treated. When I buy a car I want to know that it's reliable. When I buy toothpaste, I want to know that it prevents cavities. When I enter a manufacturer-retailer relationship, I want to know that the focus is on meeting consumer needs and that the relationship will be mutually beneficial for both companies.

The P&G/Wal-Mart relationship is considered by many to be a benchmark in the industry. By breaking down many of the barriers that once existed, the P&G focus is not on increasing sales to Wal-M art, but on a broadened perspective of finding ways to increase sales of P&G products to consumers, through Wal-M art, to maximize both companies' profits. The result is that consumers benefit with better prices, fresher product, product availability and more. The business benefits for both companies are clear.

Nothing is easy

In the Wal-Mart case, while this “new concept” worked, it wasn’t easy to do. It took a new mind-set and a new willingness to learn, a new willingness to be vulnerable, and a new willingness to reinvent your company’s methods of operating, and that tends to be difficult. Why? Because we tend to be prisoners of our past successes. Past success reduces our incentive to learn. To quote Michael Porter, “The biggest reason for strategic failure is strategic success.” To do what everybody else has been doing for the last 30 years is not strategy for inventing the “new world order.”

Another perspective in the same vein is the quote from Francis Bacon that hangs in Wal-Mart’s executive conference room that says: “If you want results never before achieved, you must use methods never before employed.”

What we are talking about is leadership. If you want 100% QA capability, few significant quality defects or zero defects, your leadership will be key in making the successful transition. Without it, “you’ll always get what you’ve always gotten” at best. Let me leave you with just one last thought: “The great danger isn’t that our goal is too high and we miss it, but rather that our aim is too low and we reach it.”

Author information

Tom Muccio has been with Procter & Gamble since 1970 in a variety of sales and marketing assignments in both the U.S. and abroad. He was part of the pioneering group that invented the multifunctional customer team concept at P&G, and has been the Team Leader since the inception of the Wal-M art/P&G relationship in 1987. In 1994, Tom was also made responsible for the expansion of the Customer Business Development concept to other P&G countries worldwide, as well as extending the Wal-M art/P&G relationship internationally. In 1995, Wal-M art and P&G made their relationship a global one, and Tom became the Global Team Leader.

Editorial support for this article was provided by Michael Clark.
The High Performance Work Organization Partnership

Author

Donald Kennedy, Director, High Performance Work Organization (HPWO) Partnerships Department, International Association of Machinists & Aerospace Workers, Upper Marlboro, Maryland

Editor’s note

This article consists of two parts. The first part contains an excerpt from a video produced by the International Association of Machinists & Aerospace Workers (IAM) labor union. The excerpt explains the highlights and examples of the High Performance Work Organization (HPWO) partnership, which brings management and labor together to cut costs, grow the business, and secure jobs. The second part includes commentary from Donald Kennedy, the Director of the HPWO Partnerships Department of the IAM. Mr. Kennedy plays a critical role in the continuing success of HPWO, building trust and commitment amongst IAM members, while maintaining support from corporate management to enhance employee involvement and continue the company’s success.

Part 1: HPWO Partnerships Video (excerpt)

There is no secret about why HPWO partnerships succeed. The concept of a HPWO is based on shared responsibilities and shared decisions about the vital functions of the workplace. Management and labor form a partnership to bring about change for the common good. Sometimes that change is driven by a company’s need to survive and grow in a global economy.

Tom Buffenberger, President, IAM International—“Companies were in trouble, looking for ways to survive. We went to those management representatives and said, ‘If you’re serious about staying an active, viable, productive, competitive company in the future, we certainly want to help you get there and achieve that goal. That’s going to protect IAM members, that’s going to provide job security, that’s going to provide a future for them and their families. If we can agree to that concept of partnership, then the opportunities for us to develop a new workplace, a new strategy for work, are endless.’”

An HPWO partnership succeeds only when there is a compelling business reason for a change. And we saw it at U.S. Repeating Arms. Members of IAM Local 609 helped the company move from the brink of bankruptcy to a successful position of growth. Skilled craftsmanship and individual will, combined with bold and imaginative management thinking, turned the tide.
U.S. Repeating Arms

Don Gobel, President, Browning & U.S. Repeating Arms, Winchester—“The old union management relationship was very adversarial. Then I read an article in a business publication written by the president of the IAM. I was really struck by the fact that they were inviting any company to join the union in a partnership of working together. We concluded that if we were going to stop the erosion of manufacturing jobs in the U.S., we have to stop the adversarial relationship that, typically, management and unions have had.

“I realized that there was a union that had made such a change in policy and wanted to do that. But it was only logical because unless changes like that take place, all of the manufacturing jobs would be gone, because we would not be able to compete in the world market.”

John Wait, V.P. Manufacturing—“If you had the old adversarial relationship that the company had with the unions for so many years, it would have made no sense for the company to stay in Connecticut. But with this partnership, and working together to make this a growing business, it has worked out very nicely for both sides. We've saved the jobs in Connecticut, we have a new facility, and we're working together to grow this business.”

Tom Buffenberger—“Today, on the rubble of an old plant, an historic site in this country, stands a brand new plant. It's an edifice to the re-commitment and the new determination of today's Winchester workers to make the finest firearms in the world.”

Harley-Davidson

Cooperation between IAM workers and Harley-Davidson management goes back nearly 20 years, to a time when the company's very survival depended on changing the way it did business.

Tom Buffenberger—“Many people know the remarkable comeback story of Harley-Davidson. The IAM is proud to be a very integral part of that story, for it was IAM members who enabled the company to return the glorious name of Harley-Davidson to the forefront of its industry.”

Bill Gray, Vice President, Human Resources, Harley-Davidson—“The people at our powertrain operation, assembly operation, fiberglass operation, have done a fabulous job. They have torn up their factories, re-laid the plants, and still made record production. They most recently moved an assembly line in our powertrain operation from one building to a new building, and had it up and running again in 37 hours. Nobody does that kind of thing. Why? I think because management believes often that we have the answer, we know how to do it, and our job is to tell, and the workers' job is to do. They didn't do that in that instance. They sat down together and said ‘We all have a lot to gain in this move without losing production. How can we get it done?’ They took ideas from everybody. We had to find a way to expand our manufacturing capability in a new and dramatic way where we could do business in a totally different manner than ever before with our employees. We put together the initial beginnings of a partnership and created the vision of a seamless
Harley-Davidson, continued

company, where the union was well respected, well highlighted, well understood, and where the union and management together would make the significant decisions relative to the business.”

Tom Buffenberger—“They invited this union to work with them in first changing the culture of Harley-Davidson and IAM members into a culture that would accept and understand and become a part of and very deeply involved in the creation of a new plant.”

Bill Gray—“It was really an exciting thing to see labor and management working together, having to struggle and overcome traditional thinking, the old ways of doing things, and move to this whole new level of meaningful dialogue and understanding that they were developing a relationship that would be mutually beneficial.”

Ken Flanum, IAM Toolmaker—“I believe HPWO is probably the best thing that could’ve happened. It gives the employee a real feeling of ownership and real pride in your work. I don’t think the company would’ve survived had it not been for the union and management working together and the start of HPWO at Harley-Davidson.”

When it built its new state-of-the-art plant in Kansas City, instead of pulling up stakes and moving to China or Mexico, Harley-Davidson paid tribute to quality workmanship and the idea that an HPWO partnership will succeed.

Tom Buffenberger—“To see that facility open its doors to the union, certainly sends a signal that HPWO partnerships are for the future.”

Alcoa Packaging Equipment

HPWO partnerships help companies survive by stabilizing their businesses. They also help those who are moving through a strong growth phase. Sometimes an HPWO partnership comes to the rescue when a company is facing both conditions, survival and growth, simultaneously.

David W. Groetsch, President, Alcoa Packaging Equipment—“We are always under price pressures from our very large customers. We sat down and looked at our options on how we could become more competitive, generally from the nature of our prices and how we could produce reasonable profit margins. We looked at a bunch of options, obviously developing new products and new technologies is one of our very strong strategies, but we also thought we needed an employee option as well. And that employee option was one of whether we would reduce wages or increase productivity. Our values said that we wanted to increase productivity and improve quality, so that we would provide good technology to our customers, high quality, through a very productive environment and workforce.”

Tom Buffenberger—“We’re committed to making change work for us. Those companies that are going to be successful into the next millennium know that they have to shake the circumstances in which they live and work, and make them work for them. It’s easier to do it together.”
Alcoa Packaging Equipment, continued

David W. Groetsch— “We sat down with the union, and at that time the union had a proposal in front of us that they called High Performance Work Organizations. That proposal was very attractive because it had the elements of exactly what we thought was needed—teaming, quality, productivity, flexibility, advanced technology. And what did the people get out of it? Security, skills, training, and hopefully, higher wages.”

Mark Howard, Manager— “We’re a custom machine tool builder that relies heavily on the skill set of our employees. We encourage and almost insist on employee involvement. One example that I’m referring to is in the weld area. We were doing the welding the same way for a lot of years, and the welders knew that there had to be a better way. So the work team came up with a suggestion of using positioners. They presented the suggestion to the support person, myself, and it sounded like it had a lot of merit. We decided to investigate it further, and when it was all said and done, they came up with $100,000 capital project that they justified, installed, designed, and built, that’s paid itself back about six times already. It’s a very successful story.”

Rich Brockhaus, IAM Business Representative, District 86— “The workers on the floor have great ideas and once the company starts listening to those ideas, the company should prosper from that. We backed the employees 100 percent with working with management, to try to come up with better ideas. We don’t look at it as a way of skirting the union, because the union has full involvement in this process.”

Dave Kern, Material Logistic Coordinator— “We set our own vacations, we set our own start and end times. We basically do just everything: our own purchasing, allocations of material, and allocations of resources.”

Gary Harper, President, IAM Local Lodge 47— “I haven’t been or seen anywhere that’s as proactive as we are. The people on the floor have liberties that I’ve never seen before in any other shop, be it union or non-union. We schedule our own overtime, we schedule our machines. Everything that has to do with the day-to-day operations of our departments our ourselves, we do it.”

The IAM Technology and Education Center

Tom Buffenberger— “There is certain groundwork that must be laid. We accomplish best by inviting those employers and our counterpart members to them, to our facility known as Placid Harbor. It’s the IAM Technology and Education Center, located in southern Maryland. For a week of very intense study and review, both the employer and the employees develop a very clear and deep understanding of what it means to engage in a partnership.”

Craig Belknap, Project Engineer— “You get to hear companies that have gone through the different phases. Our problems are sometimes identical to their problems, even though they’re in a completely different industry, and we can see what they’re doing to address it. It’s a very good sharing of ideas.”
An HPWO partnership is based on two parties of equal strength—management and labor—committed to make the changes necessary to make the HPWO process succeed. As an HPWO partnership develops, the old style, autocratic systems give way to a new democratic process.

Tom Buffenberger—“It’s a commitment to change the culture of work in America. Whether or not we’re ready for it, we know it’s coming. We want to be ready, we want to be willing, and we want to be able to survive into the next century and well beyond, representing our members the best way we can. Having our members serve in their various capacities in a partnership is the best way to ensure the IAM will be around for a long time.”

**Part 2: Don Kennedy**

Whenever I discuss instituting a change process with our members or union leaders, we talk about moving from a traditional work system to HPWO, and creating a partnership-based system. When we’re on site visits we tell people that we want to talk about the union and the company jointly developing a growth strategy, and jointly looking at the cost for all the activities that support a product or service.

Historically, traditional cost accounting systems look at the efforts of direct labor. Today, particularly in manufacturing, direct labor costs account for about 8-10 percent of the final product.

Most of the costs associated with a product are in areas other than direct labor. The advantage of activity based costing is that it looks at everything, whether it’s direct labor, design, sales, or engineering. All of the activities are put on the table, the entire process is mapped out, all the costs are evaluated, and then we can launch a process improvement program. We want to avoid a situation where jobs are being lost because we’re only focused on improving the direct labor.

When we meet with a company’s leaders, we try to assess the challenges they are facing. Harley Davidson is an interesting example, because their challenge is to double production. They have twice as many customers as they have products. So we had to focus on improving capacity, and not worry about growth. But in many other companies, the real issue is growth. Sometimes there are issues around the company being bought and sold. These are very complicated events occurring at many levels simultaneously. A partnership between a company and a union that thinks about the change process can make sure that the right things are happening at all levels in the organization.

Peter Drucker in 1990 said that soon, there would only be two types of CEOs: those who think globally, and those who are unemployed. We mock that a little bit because our approach says that it’s not enough for the leader of an organization, or
Everyone must be involved in the change process, continued

the top managers, to think globally. It’s not enough for them to be committed to change. ALL employees have to be change agents, and they have to be responsible for making the change.

We want a change process in place at all of our locations and we want the change process led by both salaried and hourly employees. The union leadership plays a critical role in the change process. We jointly define, from the beginning, the kind of change we want and how we’re going to move ahead. If we do that, we can take advantage of the opportunities in the global marketplace and protect ourselves from high risk.

Experience with downsizing and growth

We’ve had lots of experience with workplaces that have been downsized or reengineered where jobs have been lost. We’ve had many workplaces, particularly small and medium sized manufacturing operations, that have closed their doors. A lot of them have moved to lower wage areas.

We also had many experiences with places that are growing, doing extremely well, and hiring new employees all the time. We see winners and losers, and our goal is to have a strategy for each of our locations to be a winner, to grow, not to be damaged by this change in the environment.

Historical perspective on workplace systems and paradigm shifts

To put this all into perspective, I like to look at the prevailing workplace paradigms over the years. In the 19th century, the paradigm consisted of shop floor employees, supervisors, and skilled people building the product. This was known as a craft system, because customers would buy products directly from the craftsmen themselves. If a there was a chair maker, there was a craftsman or two who made the chair, got it out the door using their skills, and sold it in a local market. In the 20th century, the Taylor system began to take hold. This consisted of command and control systems, a pyramid structure where decisions were made at the highest level of the organization, one best way to do a job was defined and those instructions were sent to the shop floor. The purpose was to break the work down into very narrow components and have a person just do one piece of the work, not the whole process. The people at the top level of the organization would think in terms of the big picture. There would be planners, designers, engineers that would plan, and everyone would know their assignment and carry out their duties. That allowed the shop to ramp up production and sell many products in an emerging national market. The idea was to shrink the cost of labor, bring in technology, get rid of people, have greater control over the process. That system was very successful for many years. In fact, this system was so influential that even today, every organization is affected by this traditional way of thinking.

However, we feel that this is an older way of working and thinking where people think about the work place as a pyramid, people at the top have control, and there are walls between functions such as engineering, sales, or accounting. In terms
Historical perspective on workplace systems and paradigm shifts, continued

of direct labor, there is a perceived wall between the first shift and second shift. People on their first shift might be wondering what people on second shift do all night. People on second shift might be saying that the people on first shift probably go to meetings all day and drink a lot of coffee, but nothing much gets done. All those divisions that separate employees prevent us from seeing the larger goals and purposes of organizations.

Another negative effect is that as information starts up the pyramid from the bottom to the top, it gets changed. People at the top may be doing the best they can to make decisions, but often they are operating on inadequate information. In fact, as some information starts up the pyramid, some people will recognize a very important piece of information but they’ll keep it to themselves or within their own department. If somebody wants that information they’ll come asking for it. Nobody ever goes to that person, so that information is contained, it does not go to where it needs to be.

Creating a new workplace paradigm

We need a totally new paradigm, and that’s what the HPWO can accomplish. We need to think about ways of converting workplaces from a traditional work system. The old craft system lasted for about 100 years. The Taylor system lasted for about 50 years. Most people would say that by the mid 1970s, it was clear that the world was ready to challenge U.S. industry, whether we were ready for competition with the world or not.

Changing a system takes time and patience

In some of our workplaces we started the change process several years ago, and we know that such a comprehensive change of culture takes time. We can’t do it overnight even though we’ve tried to do it very quickly. We need an overall strategy, looking into the future by at least three to five years, to really make this happen.

We believe that successful organizations will be those that make this transition, where control is jointly exercised. We can identify the key decisions that have to be made in the workplace every day, and make them joint decisions—sub-contracting, production scheduling, and technology. We emphasize joint decision making rather than unilateral top down decision making.

We also work on the appropriate level at which a particular decision needs to be made. Some decisions are made at the shop floor level, others are made at the mid level of the organization, and others are made at the highest levels of the organization.

The work system must match up with the competitive environment

When employees have a variety of skills, changing the way they work, we can compete in a global market place. One of the reasons that the old command and control system worked so well is because we had safe protected markets here in North America. Once we lost that protection the work system did not match the
The work system mustmatch up with the competitive environment, continued

external environment in which all of us are working today.

If there’s a mismatch between the market side and the work system, that may well be a formula for decline or difficulty for a particular organization, industry, or union that’s concentrated in that industry. That’s what we’ve seen over and over again—there is a mismatch between the external environment and the internal work system. The more that we can work together to have a common effort between union and management to define a partnership and a strategy for implementing it, the more success we will have. If we only think about it as a traditional change attempt, mandated from the top down in the command and control system, it will almost certainly fail.

One issue that often comes up has to do with job descriptions. One reason I present the history of work systems is that, for years, the unions fought against the idea of job descriptions. The union people said they wanted broad job descriptions, maybe only two or three for the entire work force. Management people said no, because the old system forced them to break the jobs down into very narrow categories, and once you do that, you need a job description, or a job rate, for each category. The unions resisted, and we had strikes over that issue of broad-based job classification.

Today, the exact reverse is happening. People are saying if we’re going to change the work system, we’re going to have to change the union contract. From my perspective, the contract defines the relationship, and it has a long history. So we have to jointly figure out how we’re going to make this change happen. It’s putting the cart before the horse to say we have to change the contract and give up hard-earned benefits that were won over many years before we can move ahead and develop the change.

We want to jointly design the vision, goals, and strategy and begin the implementation process. In that process we’ll make the changes that need to be made to bring about this new work system.

Key components of a full partnership

A full partnership, in terms of shared decision-making, addresses how we identify key decisions. Then we devise a way to come to a consensus on those decisions.

Another key component is the integration of continuous learning and skill building. We see the creation of a learning organization as part of the conversion to a high performance work partnership, so that we can move ahead.

We think technology integration stabilizes and grows the business. In a traditional system technology was generally seen as a way to remove jobs, automate processes, and make the business leaner. We see it as the reverse. Technology is a key, and once you’ve integrated it, you’re stabilizing and growing the business. We look for the appropriate technologies, and introduce them in the best way possible.
Key components of a full partnership, continued

We want to co-determine the definition of quality. We have had a lot of experience over the years with quality programs. Our approach has been that the quality effort is integrated into the overall change process, and we need to jointly define what we mean by quality, and how we’re going to bring about changes to enhance and improve our quality.

We need to have shared technical and financial information. We need to think about ways in which employees get access to information that they need to do their job. It may involve training, education, or other activities, but it’s essential to share information on a broader basis.

Looking at activity based costing

We have a joint determination of cost, and we take a look at activity based costing systems so that we can lay out the work process in its entirety, not just in terms of front line employees. All activities that support a product or service are looking for areas of improvement for lowering the cost, improving the process.

These two go together—a collective bargaining agreement that helps us bring about the change, and leadership that motivates employees to accept the change. We must have leadership on both sides step up to the plate and promote the change process.

Then we need to develop a joint strategic business plan. Unlike the old days, where the business plan was shared by a small group of people, it will emerge from the partnership and set the strategic direction of the workplace. The business plan becomes a much more useful document to the average employee.

Three types of decision-making

In terms of the process, there are three ways to make a decision.

A type one decision is a unilateral decision. People define the problems, come up with solutions, and mandate their implementation.

A type two decision is still unilateral but other people have input before the person in charge makes that decision.

A type three decision is a consensus decision jointly made by hourly and salaried employees. That doesn’t mean that every employee at the work site makes every decision.

The partnership needs to develop a structure so that the decision is made at the appropriate level of the organization through consensus. We then have to identify the type of decisions that are made every day at a workplace, on things like education and training, quality, production scheduling, costing, staffing, subcontracting.

The different stages of the HPWO partnership process

Then we move ahead with our model of how we can make a full partnership happen. We have a group of people that travels throughout the U.S. and Canada, meeting with our members and employers, talking about the HPWO Partnership. Organizational change is very complex, happening at a variety of levels at the same
time. But we feel that if we can provide a framework, we can make it happen. We have several areas that we address.

**Site Familiarization**

First of all, we tour the work site. We meet with the union leadership, and brief them on our union's approach to workplace change. We discuss some of the key elements of the work site. Then we'll go through a six or seven hour process with key union leadership and some people from the corporate side. Generally it's a group of about 25 or 30 people, and we present our overall process to them. In some places people have decided to move ahead, and in some places they have not. I've been thrown out of a lot places. Sometimes leadership isn't ready, sometimes our membership isn't ready. But we have a review process where we look at our work site and ask ourselves whether that work site a good candidate for a full partnership.

**Initial Education Program**

We have an education center in southern Maryland. It's a really nice facility, and we have about 2,000 people a year attending sessions. There's a weeklong course for work sites that have decided to go ahead with the HPWO Partnership. Normally they send two key management people and two key union people. They spend a week sharing information with people from other work sites, talking about their product, service, history, and culture. Then by the end of the week each group has developed a workplace change process, a calendar of events, a series of activities that they can go back with and begin the implementation process.

Communication is critically important, but the importance of planning cannot be overstated as well. That's why we call it a planning session. We want to get key leaders interacting with people from other work sites and developing the plan.

**Communication**

Many people say there are three key things to workplace change: communication, communication, and communication. We stress developing an ongoing communication strategy early in the process as well as throughout the process.

They really focus on how to get the word out to all employees that a major change in workplace culture is going to happen over the next three years. It's going to effect everyone, it's going to change the job that everyone does.

A lot of these communications meetings may only be an hour or so. They may be fairly large group meetings, describing the process of going to the education center, developing a plan, and beginning to communicate that with employees.

We design the HPWO model in the implementation plan during that one-week session. We try to get our groups to create another model of how to reorganize the work system. A lot of places have developed a plant leadership group, and then the mid level group of supervisors. Then comes the natural work group, or the individual work teams. We try to get them to figure out how to make decisions, how the work would get done in a full partnership.
Partnership Agreement

Sometimes these agreements are signed by the CEO of the company and our Union President. What we try to do with the partnership agreement is have a document that clearly states the many goals for the partnership. It states how we want to convert from a traditional work system to a HPWO partnership while protecting the jobs of all current employees, growing the business, and hiring more employees.

The one-page document is a general statement by the company leadership, management leaders, and union leadership as to what our goals are.

If we're going to redesign the work system and tear down the old pyramid system, it's not our goal to get rid of all the employees in the middle of the pyramid. Our goal is to identify the roles and responsibilities that people have and help them adjust to that new system.

Organization-Wide Education

We conduct an organization-wide HPWO partnership education program. In some places this involves a train-the-trainer system. Harley Davidson did this with 5,000 employees, a train-the-trainer situation. We trained teams of hourly and salaried employees to present 16 hours of partnership education to the rest of the organization. Then they went out in groups of about 25 or 30 and educated their co-workers in terms of partnership education.

It's very important to us that we prepare people for the change, before we try to implement the change. We prepare the culture of the workplace before we try to introduce whatever our partnership structure is.

Revisiting the Contract

Eventually we may need to negotiate the HPWO agreement. Most of the collective bargaining agreements grew out of a traditional adversarial relationship. If we build a full partnership and implement it at the workplace it will impact the contract. We like to have a contract in place for two or three years. We'll start the partnership implementation process and then two or three years from now when the contract opens we will then integrate the HPWO partnership language into the contract.

Our first step is not to open the contract and change it. If you do that you send all kinds of negative messages to employees, and often the change effort gets derailed. So we say that the traditional contract forms the framework for the development of the partnership, and once that contract opens we will deal with any implications in the contract of the partnership.

If we've been successful, we can raise wages, improve benefits, increase job security, and provide more education and training.

Monitoring and Evaluation

Then we have to monitor and evaluate the partnership as we go. We need to
always make sure it's on track, that we're achieving our goals. They may be controversial inside the organization that we work with, and there are a number of new issues popping up all the time. So we have to monitor and evaluate constantly. We ask ourselves the following questions:

- Are we achieving our goals?
- Are we communicating?
- Are we moving too fast?
- Are we moving too slowly down the path?

Those are all very important questions, knowing that the ultimate goal is the implementation where we are jointly running a business. But we have to be patient and make sure that we're doing the groundwork that will lead us there. We also have to make sure that we're moving ahead, that we're not taking too much time when we could actually pick up the speed. Employees will sometimes get restless. You can communicate the need for a partnership, they accept that and then they expect it to happen. So we always have to ask ourselves about the pace of change. It's an ongoing process.

Donald Kennedy is the Director of the High Performance Work Organization (HPWO) Partnerships Department, which is located at the International Association of Machinists & Aerospace Workers' Headquarters in Upper Marlboro, Maryland. This Department provides assistance to IAM members and staff and the employers that the union has under contract, who want to convert from a traditional work system to a full-partnership HPWO.

Editorial Support for this article was provided by Michael Clark.
Envisioning Reinvention: Discoveries on the Quality Frontier in Government

Author
Commander Christopher Boegel, Quality Assurance Staff, Office of Marine Safety & Environmental Protection, U.S. Coast Guard, Washington, D.C.

A vision for reinvention
After six years of reinvention under the Government Performance and Results Act (GPRA), there are widespread indications that most government agencies are not capable of annual performance measurement. If transformation is the goal of reinventing government, then a clear vision of the transformed organization is essential. However, a clear vision is exactly what is lacking in most federal agencies today.

Vision is about change. Yet vision is one of the most misunderstood concepts in strategic planning, and it is completely overlooked in the GPRA effort. We need to be clear about where we are going, where we are now, and the process we are going to use to reach the goal of reinvention.

Transforming the public sector
I believe that transforming the big systems of government is the strategic goal of reinvention in the public sector. David Osborne and Ted Gaebler make this clear in their book entitled Reinventing Government:

“[M]ost public sector TQM projects focus on very minor systems, the ones that are easiest to change... The real challenge is whether TQM can address the big systems: budget, personnel, and accounting... TQM will run its course if it deals only with the micro systems.”

GPRA as a yardstick for reinvention
Why does government need to be reinvented? The GPRA defines the problem as threefold:

• Waste and inefficiency of government activities
• Poor goal-setting
• Inadequate information on program performance.

GPRA’s purpose gives a general sense of direction, including:

• Accountability for program results
• Using information to improve service
• Comparing the relative effectiveness and efficiency of agencies.

GPRA’s emphasis on program results, efficiency, and information can be used as a yardstick for assessing the progress of reinvention. So how does the reinvention effort measure up? What do the lessons learned from GPRA tell us about the...
progress of transforming government agencies? GPRA has already provided six years of experience with change management, particularly in the 50+ pilot projects undertaken from 1994-96. The U.S. Coast Guard had a GPRA Pilot Project from 1993-97, and I was managing our performance reporting under GPRA from 1995-97. Many people like me can offer their personal perspective on lessons learned during the GPRA pilots. But lessons learned in one agency do not necessarily translate to the government in general. What about an overall look at GPRA?

Recent reports by the General Accounting Office (GAO) provide a broader perspective on the status of the government-wide GPRA effort. I read a number of the GAO’s reports on agency performance plans, and I was struck by the recurring themes. I also found that the picture painted by GAO’s comprehensive review resonated strongly with my experience with GPRA. Let’s look at some of recurring themes from the GAO reports, and then explore these issues using some examples from my experience with our GPRA project.

In December 1997, eight Congressional leaders asked the GAO to conduct an evaluation of 1999 GPRA Performance Plans, to answer three questions:
1. “Does the plan provide a clear picture of intended performance?”
2. “Does the plan portray how resources and strategies will achieve performance goals?”
3. “Does the plan provide confidence that performance information will be credible?”

These questions flow logically from the problems identified in the GPRA’s findings:
- Poor goal-setting
- Inefficient activities
- Inadequate performance information.

I read a number of the GAO’s reports on 1999 Performance Plans, to see what GAO found. I saw two recurring themes about the agencies’ GPRA Performance Plans:
1. Information deficiencies
   - “... do not provide complete confidence that... information will be credible.”
   - “... does not have systems in place to capture performance data for many of its five-year objectives.”
   - “... do not recognize the limitations of data.”
2. Failure to link Budget, Activities and Outcomes
   - “[the plan]... does not organize resources by performance goals.”
   - “… does not provide performance indicators for program activities.”
   - “… does not fully portray how strategies and resources will help achieve goals.”

What did GAO find when they assessed GPRA plans?
What exactly do these statements mean? Let’s begin with information, and I’ll use some examples from my experience with performance planning to illuminate.

First, let me give you a thumbnail sketch of the Coast Guard’s GPRA Pilot Project. The Coast Guard submitted three Performance Plans and three Performance Reports during the pilot phase of GPRA. The pilot projects were test sites at a number of agencies to start performance reform. Each agency was asked to define its mission, describe its program activities, and set goals and performance measures for those programs.

The Coast Guard GPRA Plan was developed by the Office of Marine Safety and Environmental Protection. The plan had a number of prescribed elements, including the following:

- Mission Statement
- Description of Program Activities
- Program Goals and Outcome Measures

Our mission was defined as: “To protect the public, the environment, and U.S. economic interests by preventing and mitigating marine incidents.”

The plan described a large organization, with roughly:

- 2,800 people in over 50 field & support offices throughout the U.S.
- 400 people in national headquarters
- 100 people in miscellaneous units
- $500 million annual operating budget.

Our GPRA Plan described our main activities, six in all, which we called “operational processes.” These activities summarized our role in regulating commercial shipping in the United States:

2. Developing regulations on handling oil and hazardous materials onboard commercial vessels and marine transportation facilities.
3. Negotiating international marine safety and environmental protection standards on behalf of the United States.
4. Inspecting regulated vessels and facilities to ensure compliance.
5. Controlling vessel and facility operations, in dangerous situations.

Our program goals called for quantitative improvements in program outcomes from 1994-98. Our goals were divided into our two traditional mission areas, Marine Safety and Marine Environmental Protection. Here are some representative goals (simplified for clarity):

- Marine Safety Goals:
  - Reduce the risk of major loss of life on passenger vessels by 20%
  - Reduce fatality rates on fishing vessels by 40%

Examples from GPRA reports illuminate GAO’s government-wide findings...
Examples from GPRA reports illuminate GAO’s government-wide findings, continued

- Eliminate substandard vessels from U.S. waters.

Marine Environmental Protection Goals:
- Reduce the volume of oil pollution from maritime sources impacting U.S. waters by 20%
- Reduce the number of major and medium oil spills from maritime sources impacting U.S. waters by 50%
- Increase the removal of spilled oil in pollution response operations.

This plan was an auspicious beginning for performance reform. The mission statement and the program goals were the product of a lot of hard work and serious thinking about why we exist, and the results we wanted to achieve. The plan was praised by GAO, and deservedly so. The publication of the performance plan unleashed great energy inside the organization, marked by the creation of new ideas and approaches to improving performance. For many people involved in our GPRA project, the planning phase from 1993-95 was an exciting time. But there was much work ahead, particularly with respect to measurement, and the performance plan acknowledged this:

"Measurement will be done at many levels. We will measure processes, to enable continuous improvement. We will measure results, to maintain continuous focus on the bottom line... We will measure the effectiveness of activities... identify unintended effects and external factors. And we will measure the cost-effectiveness of our programs, to demonstrate their value and justify their cost to the taxpayer."

The stage was set for the next big phase of the transformation process—performance reporting, which meant that we would actually use our information system for management.

Lessons learned from performance reporting under GPRA

While performance planning was an exciting phase of GPRA, the performance reporting phase was a more sober period, getting down to the nitty-gritty work of collecting and analyzing information. During the reporting phase of the GPRA pilot from 1995-97, I was assigned as the Chief of Planning and Analysis for the Office of Marine Safety and Environmental Protection, and I was responsible for producing the annual GPRA Performance Reports.

We learned profound lessons in the performance reporting phase of GPRA. We learned little about our actual performance. What we learned was a great deal about measurement, goal setting, and the information process itself. Much of what we learned illustrates the recurring problems found by the GAO in their government-wide review of GPRA. Let’s explore some of the problems with information. After that, we’ll move to the larger issue of linking budget, activities and outcomes.

Information problems in performance reporting

The questions posed about GPRA information are a good starting point for exploring the barriers to reinvention:

- Does the agency recognize the limitations of existing data?
Information problems in performance reporting, continued

- Is the performance information credible?
- Are systems in place to capture performance data for all goals?

One major limitation is unreliable measurement due to imprecise data. Please see Figure 1 below for an example.

![Figure 1. Fishing Vessel Fatalities per 100,000 Crew Members](image)

Look at our goal and measure on reducing the fatality rate of U.S. fishermen. The unit of measuring the fatality rate is deaths per 100,000 fishermen. The bar chart depicts the fatality rates from 1985-96. The dashed line depicts the goals for 1994-98, based on a 1993 benchmark. The goal was to cut the fatality rate by 40% in five years, with annual reductions of 8% per year. The two data sources were fatality data collected by the Coast Guard, and population data taken from the Bureau of Labor Statistics (BLS).

Look at the data for 1995. The bar chart indicates that the fatality rate for 1995 was 53 deaths per 100,000, achieving the annual goal (54 or less, indicated by the dashed line). In fact, with the information systems we are using, we can't tell whether or not the 1995 goal was met. We learned this in 1996, and discussed the limitations in our 1996 GPRA Report.

The best we can say about 1995 is that we are almost certain that the fatality rate was somewhere between 45-63 deaths per 100,000. The three "error bars" in the data for 1994-96 point to the problem, showing that our measure for fishing vessel safety is a very blunt instrument. The large margin of error derives from the precision of the available population data, which has a margin of error of +/- 17%.

Why so imprecise? Most BLS worker population estimates are extremely precise, because they are derived from an extremely accurate industry survey. Not so with the fishing worker population estimate, which is by necessity derived from a less precise survey.

The problem of imprecise data is often overlooked, or dismissed. Extreme precision is not needed for performance measurement. On the other hand, gross imprecision can render information meaningless, as is the case here. Using this data...
Information problems in performance reporting, continued

Information problems in performance reporting is like using an elastic yardage marker to measure first downs in a football game. The lesson is this: When data is this imprecise, it is unreliable for measurement.

But can we do better with the tools we have? Are the information systems we are using suitable for performance measurement? Suitability for measurement involves a number of factors. Precision is one of these factors, and with the existing information systems, precision cannot be improved. Timeliness is another factor, and in this case the information fails again. Take another look at the chart on fishing vessel fatalities, and note the data for the year 1996. The bar is shaded in a lighter color, and surrounded by a dotted line. These markings denote that the data is an estimate, not a final figure. We were unable to report 1996 results in March of 1997, when reports were due under GPRA, because our existing database has a lag time of 7-9 months.

The problem is even worse for other performance information, like our pollution measures, where the lag time of the exposure data we use is 15 months long!10

For annual pollution measurement, we had to estimate both the numerator and the denominator. In late 1996, we learned that our estimate of the volume of oil pollution in 1995 was off by a whopping 15%! In 1997, when the exposure data for 1995 was finally available, we discovered that our estimating error for the 1995 exposure data was 9%. Combining the estimated data, the potential error for 1995 oil pollution outcome was over 25%! And we were trying to measure against annual improvement goals of 4%!

Another lesson: When information systems lag months and years behind the present, they are not useful for annual performance measurement.

Linking budget, activities, and outcomes in GPRA

Let's move on to the question of linking budget, activities, and outcomes, which includes:

- Not organizing resources by performance goals
- Not providing performance indicators for program activities
- Not showing how strategies and resources will help achieve goals.

Does our information actually indicate the outcomes of our activities? Consider our oil pollution goal and measure, which is shown in Figure 2. Our goal for 1994-98 was to reduce oil pollution from maritime sources by 20% (from a benchmark level in 1993).11 The unit of measure was gallons of oil spilled per million gallons of oil shipped. The two data sources were pollution data from the Coast Guard’s database, and petroleum commerce data from the U.S. Waterborne Commerce Statistics, published by the Army Corps of Engineers.

The data shows a dramatic 65% drop in the rate of oil pollution after 1990, summarized below:

- Average Annual Rate 1982-90: ~17 gals spilled per million gals shipped
- Average Annual Rate 1991-96: ~6 gals spills per million gals shipped.
What explains the sharp and sustained drop in oil pollution after 1990? Was it related to any of our six program activities? Our Performance Reports provided no evidence of any influence by our activities. In fact, we could not even attempt to make a connection, because we were not measuring any of our activities.

The compelling explanation for the drop in oil pollution is an external factor, namely, safer operations by the marine industry in response to the Oil Pollution Act of 1990 (OPA). OPA was passed on August 18, 1990, one year after the catastrophic oil spill from the Exxon Valdez. The centerpiece of OPA was a major incentive for the marine industry to prevent pollution. The incentive was called “unlimited liability,” which exposed oil companies and vessel operators to the possibility of paying unlimited costs from damage claims. OPA also exposed polluters, including corporate management, to possible criminal prosecution by the Department of Justice.

OPA did not give the Coast Guard any significant pollution prevention program to use in the 1990s. Nor were there any significant changes in the quality or frequency of our pre-existing activities in 1991, or in 1992-94. In the case of our pollution goals, our information was indicating the success of something other than our own activities. And in the case of our other goals, we were not capable of demonstrating any influence from our programs.

Why did GAO find such problems with agency Performance Plans? It is easy to envision in a plan that there is a relationship between activities and outcomes. It is harder to demonstrate an actual relationship in a performance report. GAO’s findings are symptomatic of a more fundamental problem: That most agencies do not have the management information needed to do performance evaluation.

The Coast Guard’s GPRA project illustrates this problem. The plans contained gross budget figures, described the main program activities, and explained the program goals and measures. But there was no systematic connection from budget...
inputs to activities to goals. To begin with, the existing information system can not even track the actual flow of resources from budget to activities.

Generally, there are no distinct relationships between goals and activities. The program outcome goals and activity descriptions were developed years apart, without reference to one another. This creates a confounding array of multiple-to-multiple relationships. If an auditor wanted to track the flow of money in our programs, s/he would find would at least 276 possible streams of cost from budget accounts to activities to goals, and that none of these streams can be tracked. This problem is by no means unique to the Coast Guard.

The absence of basic management information is pandemic in the federal government, and the magnitude of this problem was reported by the GAO after attempts to audit 24 agencies under the Chief Financial Officers Act:13

“... a central finding [is that] many agencies need to make better progress in developing the underpinnings of well-managed organizations...”14

Inability to track inputs to activities is an old problem. Linking activities to results is a new problem. Agency activities have existed for decades, apart from the new goals conceived after GPRA. Do the enumerated activities give a balanced account of the bulk of resources spent (i.e., 80-90% of the budget)? And do those activities have a significant relationship to the enumerated goals?

Let’s look at the balance between activities and budget in our GPRA Plan. Our program costs are labor-intensive, so wherever most of our people are indicates where most of the budget is being spent. The first three of our six activities involve developing safety regulations and standards, representing the work of about half of our national headquarters staff, or 5% of our workforce. The other three activities represent the work of the other 95% of our workforce, operating in field and support units.

This imbalance between resources and activities indicates that the activities of headquarters are over-represented in the GPRA Plan. But more importantly, the activities of field units are vastly under-represented and poorly described. To create a management system that tracks resources from activities to outcomes, there needs to be a sufficient description of activities performed by the field workforce. If 95% of the workforce is performing certain activities, then our activity descriptions and budget accounts might be useful for performance measurement if they explained more specifically what most of our people are doing from day-to-day with respect to the goals they are trying to achieve. Another lesson: we need to design a new set of activity (i.e., process) descriptions that clearly and concisely represent where most of our money is going.

Needed: Management information systems

It is no surprise that our available data is inadequate for performance measurement, because existing information systems were not designed for performance measurement. Our database is adequate for its designed purpose, but it is not a management information system.
The need for information re-design is a major lesson from our GPRA effort. This is the conclusion of many organizations embarking on performance measurement. And that is the message of measurement expert Mark Graham Brown in his book *Keeping Score*, an authoritative text on performance measurement. His book is structured in three parts:

1. Evaluating Your Existing Measurement System;
2. Selecting the Right Metrics; and

Brown’s message, in a nutshell, is that when an organization sets the right goals, it is embarking on the path to information redesign. Brown offers a formidable process for measurement redesign, to build a new information system for performance measurement. His goal is to create a balanced scorecard that is designed for the purpose of linking budget-to-activities-to-outcomes.

Brown envisions a generic information model, shown in Figure 3. In my view, Brown offers a vision of what Congress and the GAO are looking for—a veritable management information system, linking budget to activities to outcomes. Brown envisions measuring inputs (budget and resources), core and support processes, and process outputs, and streaming all of these to measured outcomes.

Brown does not merely offer a vision of a management information system, he offers a way to get there, which is his measurement design process:

1. Determine your Mission, Vision, and Values
2. Conduct a Situation Analysis
3. Develop your Key Success Factors
4. Develop a Balanced Scorecard of Goals and Measures

**Figure 3. Model of a Management Information System**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Processes</th>
<th>Outputs</th>
<th>Outcomes</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled motivated, happy employees</td>
<td>Design of products &amp; services</td>
<td>Products Services Financial results Activity levels</td>
<td>Delighted customers Customer needs met Outcomes of products &amp; services</td>
<td>Long term survival</td>
</tr>
<tr>
<td>Customer requirements Raw materials Budget</td>
<td>Production of products Perfection of services Delivery/ Servicing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reprinted from *Keeping Score*, by Mark G. Brown, by permission of the author.
Measurement design process, continued

5. Develop a Measurement Plan

I could spend a lot of time trying to explain Brown's process, but I'll let you read his book about that. I will tell you that I've used his approach repeatedly to develop goals and measurement plans with a number of workgroups I have led or facilitated, and my customers will tell you enthusiastically that Brown's process works.

I'm showing Brown's process because I want to focus on where he begins. Brown's process is radical—it literally goes to the root of management information by asking the most fundamental questions:

• What is your Mission?
• What are your Values?
• What is your Vision of the Future?

Brown offers a process for setting goals, and "reinventing" our information systems, based on Mission and Vision. But using this process requires an understanding of what Mission and Vision mean.

Nowadays, our workplaces are deluged with "planning babble," the proliferation of undefined terms that obscures the meaning of essential concepts like mission and vision. As Brown writes, "Different organizations have different meanings for terms like mission, vision, and values..." I believe that this issue has become a huge barrier to understanding change management, and that a clear understanding of these terms is essential to the success of reinvention.

Brown, a long-time corporate consultant, finds that most organizations fail at developing mission and vision. Brown warns that Mission and Vision statements usually fail because they are impossible for employees to understand, remember, and believe in:

"If you look at 20-30 mission and vision statements... you will be amazed at how similar they are. It's as if someone got out the jargon generator and threw these things together. Some of the words and phrases you tend to see in many of these statements are as follows:

• World-class...
• Innovative...
• Customer-focused...
• Market-driven."16

Brown defines mission as "what you are, and why your organization exists."17 Brown writes that vision should "identify[ ] where you want the organization to be in the future." Brown finds that vision statements cause the most trouble. "The vision statement is the one guiding document that usually needs the most surgery."18 While Brown's definitions distinguish the two statements, there is another source that I found very helpful in understanding vision.
Understanding how mission & vision work together, continued

Understanding the role of mission and vision in strategic planning is a central theme in the book *Built to Last*, by James Collins and Jerry Porras (Harper Business Books, 1994). They argue that a strategy for long term success means acknowledging the need for both continuity and change. In short, Collins and Porras distinguish mission and vision this way:

- **Mission** is about what must endure
- **Vision** is about change.

Collins and Porras define mission as the most enduring of the guiding documents. Like Brown, they see mission as the purpose served by the organization in society, “a guiding star” that “will last 100 years.”

Vision, by definition, is temporal. Collins & Porras write that a vision statement should vividly and concisely describe how the organization is going to change in the next 3, 5 or 10 years. A vision statement should be energizing, and compel people to act. And they insist that vision must have “a clear finish line.”

If mission is the most enduring organizational guidance, then it follows that it is also the most important, and all other guidance, including vision, is subordinate to and supports the mission. Collins and Porras also conceive mission and vision as two complementary and inseparable parts of an essential whole. The inseparability of mission and vision in this concept reveals a glaring shortfall in the planning system conceived under GPRA—there is no guiding document that drives organizational change. GPRA’s program-centered planning system ignores vision. GPRA is not a strategic planning system.

Ironically, the planning system of GPRA produces a potential barrier to Reinvention, in the form of an unbalanced scorecard. With a sole focus on mission and results, GPRA fails the test for a balanced scorecard, set down in the Baldrige Award criteria. Under the Baldrige system, and using Mark Brown’s measurement design process, mission and vision are the two lenses through which goals are developed. Under the Baldrige balanced scorecard, vision-related goals are developed which go to the heart of organizational change, to transformation: core and support process goals, employee goals, and supplier performance goals.

GPRA, lacking the lens of vision, produces what Brown would call a classic “unbalanced” scorecard, an “over-emphasis” on a narrow range performance information.

A balanced scorecard—information for reinvention

The balance, completeness, and quality of an organization’s information is a primary indicator of transformation. Can the organization provide accurate, precise, and up-to-date information that can be used for management? Is the information
A balanced scorecard—information for reinvention, continued

valued by the public? In the case of government in the information age, is producing useful information becoming a primary public service? On the other hand, if an agency’s information remains inaccurate, slow, imprecise, or incomplete, can it serve the public well in the information age?

GPRA has confronted the government with the implications of the information age. The question is, can government be transformed? Can agencies formed in the industrial age shed their old skin, and conceive a new form and a new way of doing business. Or will they continue running under the assumptions that worked in the 20th century? That is the question posed by Peter Drucker, in his 1995 critique of reinvention, entitled Really Reinventing Government. 22

Drucker’s question resonates strongly, when we take a second look at our information on oil pollution. The Oil Pollution Act simply provided industry an incentive, without regulations, and the industry discovered the way to reduce pollution. Regulatory agencies inspects hundreds of thousands of sites every year, aiming to ensure compliance with federal regulations. Does following government regulations prevent accidents? Is there another way of achieving the goal? Are the old activities still valid? Do we have the information to answer these questions? If not, reinvention demands that we build the information systems we need to answer them.

Notes

4. The performance period of the GPRA pilot project was 1994-96. Annual performance plans were required for each year, and were submitted in September of the preceding year (e.g., the 1994 Plan was submitted in 1993).
6. The benchmark was set at the end of historical trend line calculated using data from 1985-93.
7. 1996 GPRA Performance Report, U.S. Coast Guard Marine Safety & Environmental Protection Program, March 1997, p. 6 and Appendix I.
8. BLS estimates that the confidence interval at the 95% confidence level is +/- 17%.
9. The BLS “Establishment Survey” has an enormous sample size, providing accuracy upwards of 99.8%.
10. The exposure data we use for measuring oil pollution outcomes, the Waterborne Commerce Statistics, from the Army Corps of Engineers, is published annually in March of the second year after the year of record.
11. The 1993 benchmark point on the trend line is calculated using the historical pollution data from...
Notes, continued

1982-93. The trend line does not include pollution from oil spills of one million gallons or more (charted in stacked bars, such as Exxon Valdez in 1989) which are statistical outliers.

12. The only possible pollution prevention feature related to Coast Guard programs was double hull requirements for vessels, but these don’t take effect until 2015.


16. Brown, p. 159

17. Brown, p. 146

18. Ibid.


20. Ibid.


Author information

Commander Christopher Boegel has served as a Coast Guard officer for 20 years, with seagoing and marine safety assignments in the Pacific Northwest, the Great Lakes, and the port of New York, travelling from the Arctic Circle in Alaska to the oil fields of the North Sea and the Red Sea. A career specialist in the Coast Guard’s Marine Safety Program, his most recent assignments include serving as Chief of Strategic Planning and Analysis from 1996-1997. He was a member of the Coast Guard’s 1997 Waterways Management Strategic Planning Task Force, and is the leader of the Baldrige Measurement Team for the Marine Safety Program.

Commander Boegel has received numerous awards, including the Coast Guard Commendation Medal, and the EPA Commendation Medal. He also served on the first Coast Guard team to win the Hammer Award for transforming the Coast Guard’s civil penalty process. In 1997, the General Accounting Office cited the superiority of the GPRA effort directed by Commander Boegel. He has a B.S. in Management from the U.S. Coast Guard Academy, and a Master’s degree in Public Administration from Harvard University.

Editorial support for this article was provided by Michael Clark.