Management

Improving the way organizations run through participative planning and management.
Los Alamos National Bank
2000 Malcolm Baldrige National Quality Award Winner

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Organization Overview and Leadership

Introduction
William C. Enloe, Chairman and Chief Executive Officer—We are proud that LANB is the first bank to receive the Malcolm Baldrige National Quality Award, and we hope that our experience, as reflected in this article, will help you in your pursuit of performance excellence.

LANB was organized in 1963 as a bank committed to the community, to help residents, businesses, and organizations make Los Alamos a city with a great future. We have been successful with that philosophy. We are now the largest independent bank in New Mexico. We currently serve three communities: Los Alamos, Santa Fe, and White Rock. We have assets of $725 million and employ 185 people. The company continues to invest deposits locally, making 95% of its loans in those three communities, and lending out nearly 100% of its deposits. Our main customers are small business, individual consumers, and the real estate market.

Customer Service
The foundation of our bank is customer service. We conduct annual market surveys to give us a realistic view of how we are viewed with respect to our competition and to see where we need to make improvements. This information is taken seriously. It is analyzed and addressed continuously. In our most recent market survey 88% of our customers rated us in the highest category for customer service.

The goal of our organization is to offer great value in every product we sell. For us to accomplish this we must keep our expenses low compared to the income that we generate. Efficiency is a key factor, allowing us the flexibility to provide superior products at the best value. For example, LANB generates 5% of its income from fees. That compares to 35% by our competitors. We are able to do this and still earn a better return for our stockholders than our competition does. This level of performance is possible because we have exceptional employees. We select individuals that will fit into our hard-working and customer-driven culture. We want people that are interested in banking as a career, not just a place to pick up a paycheck. Another trait
Our major business principles, continued

we want in employees is dedication to the communities that we operate in. We've found that the people who care the most about improving the community are the people who give the best customer service.

**Clear Expectations**

The next step is to clearly communicate what we expect from employees and what they should be able to expect from the bank. We do this by reviewing with every new employee our vision, mission, core values, and customer service standards.

**Long-Term Financial Stability**

The challenge is to avoid making decisions for short-term gain at the expense of the long-term health of the organization. It takes commitment, discipline, and a well-thought-out strategy to avoid that temptation. LAN B has done this well, as demonstrated by our consistent earnings and asset growth.

**A Clear and Challenging Vision and Mission**

Leadership starts with communicating a clear and challenging vision for the company. If we expect employees to be diligent and work hard, they must clearly understand what they are expected to accomplish and why.

The organization's vision should be aggressive but realistic, easy to understand, and widely accepted (see Figure 1). Low expectations, or ones that are too lofty, can be as bad as not having any at all. The level of involvement in the development of the vision should be widespread.

The mission statement explains our purpose and what we are trying to accomplish day in and day out (see Figure 2). Employees, however, must know what their role is in the vision and mission. You can't just write vision and mission statements and hang them on the wall. One of the biggest revelations that emerged from an employee survey was that our employees understood our vision and our mission statements well but did not relate them to their individual jobs. We've been successful in changing that, and we have reaped the benefits of better buy-in and alignment from our employees.

**Good Information and Planning**

Strategic leadership starts with good information from customers, community leaders, employees, and investors. The information needs to be factual. It also needs to be projected, not just a reflection of current conditions.

Good planning deals with the future, and not repeating the past or reflecting the present. Our budgeting, operations, measurements, and improvements are inclusive of the board of directors, management, and staff. The plan is important, but communication, buy-in, empowerment, and execution are what make it all work.
Our major business principles, continued

The need to have a plan that is flexible and can adjust quickly to unforeseen events is paramount. An example of this is a drop in interest rates that prompted a large volume of refinancing for our loan department. That was not part of our strategic plan, but if we had not been able to respond quickly we would have lost valuable customers and needed revenue.

Serving three constituencies

LANB looks at three main areas for success: (1) our customers, (2) our employees, and (3) our investors. LANB has met the needs of all three groups, and we need to continue to do that to be successful. We cannot overemphasize one at the expense of the others. To accomplish this we established a set of factors that we call High Performance Measurements. These measurements indicate when we have the proper balance among the three groups. These include net interest income, growth rates, customer satisfaction, employee satisfaction, return on equity, and asset quality. This approach has actually reduced the number of measurements we look at, and it alerts us much more quickly to the areas that need attention.

Management by fact

Management by fact is vital to customer satisfaction. We use surveys, focus groups, pilot programs, and feedback forms to gather information.

The needs and wants of today’s customers change quickly, and the ability to move rapidly to address these changes is critical in today’s economy. We pride ourselves on our flexibility and our culture of change. For example, we recently made a decision to introduce home banking three years earlier than our strategic plan called for because our market survey indicated that this was an important product for our customers.

Service to the community

LANB was established to serve the needs of our community. This is the cornerstone of our organization and an intricate part of our culture. The results from this dedication are profound. Much of our customer loyalty and employee pride is a result of this philosophy.

Developing trust

Employees are the sum total of an organization. The primary function of management is to develop and motivate the people that work for the organization. This cannot be accomplished with rhetoric. It has to be sincere, and it has to be actively pursued. The key is developing trust—trust on both the management side and the employee side. Management has to share knowledge, train, and allow individuals to do their job. Employees have to trust that management will support their decisions and respect their opinions. Management has to identify the positive leaders and then guide and mentor them. It is also important to recognize the negative leaders and either change them or help them find another corporation to work for. It takes years to develop trust. Individuals that could be capable leaders but are not aligned with the direction of the organization can destroy that trust quickly.
Employee recognition and reward

Employees need recognition, and they need to share in the success of the corporation. LAN B offers a comprehensive benefit plan along with profit sharing and an employee stock ownership plan. We do this in order to retain and recruit the best individuals to work for our bank.

Business results

Achieving good results enables us to keep it all together. LAN B has never had a reduction in the workforce or a year that it has not produced good financial results. Over the past eight years the bank has had exceptional increases in both asset growth and earnings. This allows us to promote our leaders and continue to reward our employees with good raises and profit sharing. It also invokes loyalty from our stockholders and our customers.

The effectiveness of our bank leadership was tested recently by a fire that ravaged our community. It was necessary to relocate our entire operation, and the demands on our employees were tremendous. The response from our employees was incredible. While management was dealing with community issues, employee leaders took over. Decisions were made that addressed operations, customer service, pricing, and employee issues with little guidance from upper management. These decisions were made because they needed to be made, and our employees had the training and the confidence necessary to make them. They felt that they were the right decisions and trusted that management would support them. Because of their leadership, LAN B was a major force in minimizing the negative effects of the fire.

We established a fire relief fund, paid our employees to assist organizations, and participated in shelters, food distribution, and medical aid. We also worked to establish a fire loan fund for companies to meet payroll and cover other expenses while they could not operate. The bank also took care of its employees—five employees lost their homes. We compensated them monetarily and provided counseling and time off for anyone who needed it. We paid our employees that did not work and paid the ones that did double time. For customers, we placed a moratorium on loan payments on properties that were destroyed. We made zero-interest loans to cover expenses while their incomes were reestablished. We provided grants for individuals who had little or no insurance, and we extended our banking services to seven days a week until the crisis subsided.

Strategic Planning

Steve W. Wells, President and Chief Administrative Officer—I am immensely proud of our people, and yet we are far from perfect. Our Baldrige application was fifty pages long. The feedback report we received was sixty-six pages long.

We learned that excellence comes in many shapes and forms. Our way is just one way. I don't suggest that you do your strategic planning our way; in fact I am not sure that our way would work as well for you as it does for us. All of what I present here is not mine, nor ours—it has evolved from years of experience, along
Introduction, continued

with many hours of listening and learning from competitors and quality-passionate partners. We've learned from hospitals, governments, schools, technology companies, manufacturing companies, and Baldrige winners. What we've learned and adopted has become ours through careful tailoring and extensive teaching in LAN B.

We are a small company, and we try to keep things pretty simple. We have just three branches: (1) our main office in Los Alamos, a town of 12,000 people that has one main employer that employs 14,000, (2) a branch in Santa Fe, a town thirty miles away with a population of 120,000, and (3) a branch in White Rock, a bedroom community that is home for 8,000 people.

The purpose of strategic planning for us is to create an alignment of employee actions and corporate objectives to produce consistent momentum and direction with a high level of corporate achievement. It is truly a focus on the future.

Our strategic planning process

Our strategic planning process is a six-step continuum (Figure 3). We have found that having more steps allows complexity to set in, which leads to communication disconnect, which leads to action disconnect. This is something that is unacceptable in dealing with something that is as important as our future. The six-step strategic planning process may look complex, but it is really quite simple. While it appears linear in sequence, there are two processes, one on either end, with the corporate objectives being the centerpiece. We “burn the candle at both ends,” so to speak, because time to completion in this process is essential for meaningful results.

So while the board of directors and management (at one end) are looking at long-term desired outcomes, our employees and their supervisors (at the other end) are working on what needs to happen in the coming year in their departments.

We get together to align action plans and corporate objectives, compare resource requirements, and recognize synergies across departmental lines in the middle of the process. Once corporate and departmental action plans have been approved, we work to align daily employee activities with these action plans. The foundation for this process is assessment, which occurs as often as daily. You can see at the top that development and deployment are on a continuum. While development is mainly a management activity, and deployment is mainly an employee function, some of each occurs at both ends to varying degrees.

Step 1 in our strategic planning process is that leadership articulates the
Our strategic planning process, continued

organization's vision. Without a vision, our strategic planning process would lack a unifying, challenging, and inspiring direction. For example, when we were getting close to our Vision 2002 goals, our CEO established Vision 2005, which challenged us to achieve a compound growth rate of 15% over five years. The highest growth rate that we had had in the previous five years was 10%. The new vision clearly aims to stretch us toward a higher potential.

In Step 2, Strategic Direction, our board of directors meets annually to set this direction, and quarterly to assess progress. It may also meet as often as weekly or monthly when conditions warrant it. We manage by fact. If we didn't, we would ultimately be doing wrong things, going in wrong directions.

The strategic planning inputs take the form of leading indicators—the road in front of us. These include economic forecasts, customer and employee surveys, legislative and regulatory issues, and a host of other continuously changing factors that are a part of the environment in which we operate. Lagging indicators are also important, representing the road we have traveled. They help us measure the speed at which we are moving toward our five-year goals. One lagging indicator is market analysis. Others can be as simple as reviewing competitors' offerings that are already on the market, assessing our internal capabilities with an employee skills audit, or a technology audit that compares the drivers in our industry with our internal systems. And we do much the same with suppliers and partners.

Step 3 is where we establish our three corporate objectives. Any proposed action plan must align with these objectives or we will not pursue it. This becomes complex, although we may not notice the complexity because there are always some relationships that are in the background at any given time; if they're not active at the moment they can be easily overlooked. Figure 4 helps to demonstrate this complexity. In Figure 4 you see three ovals, but there are actually seven shapes on the diagram: three ovals that represent the three corporate objectives, three other shapes where two objectives intersect, and yet another shape in the center where all three objectives intersect.

With regard to Individual Achievement, we believe everyone wants to be proud of what they can accomplish in their personal lives as well as their work lives. When (a) our employees realize their individual goals and (b) our customers receive value while (c) the bank makes money, we are at our best.
Our strategic planning process, continued

In Service Excellence, when (a) our customers are exceedingly satisfied with the service they receive, (b) we are building great people and teamwork, and (c) the bank is rewarded financially, we are doing it right.

In Financial Performance, when we can (a) ensure our future will bring financial success, (b) our customers like our prices, and (c) we share those profits with our employees, we are great.

To show you how we think about how the ovals intersect, the area where the Individual Achievement and Service Excellence objectives intersect represents a place where employees get satisfaction from assisting customers and, when this is done well, our customers receive value. But that is an area that is (a) expensive to operate and (b) provides no direct financial return. So what we do is encourage employees to find ways to connect their efforts to Financial Performance, too, thus moving into the High Performance sector and better serving our mission.

This diagram serves as a backdrop for decision making and self-assessment every day in our organization. It provides clear solutions to the complex human interrelationships and the delicately balanced needs of our business.

In Steps 4 and 5 our strategic planning process provides department leaders with the ability to identify the progress that needs to be made in the coming year and integrate it with the needs of their people. For instance, a supervisor may have an employee who wants to work towards a master’s degree, or move to a new department in the next year, as identified in their personal goals. This becomes a part of the departmental education or staffing plan for the coming year. It serves to say that an employee’s need matters, and resources are allocated. (This will ultimately have to reconcile and align with our corporate objectives, the budget, and expected departmental action plans.) This gives front-line employees and department leaders a say in what we do in the coming year to achieve our corporate objectives. When we choose not to embrace an initiative, it is clear why, and the decision is not based on a favorite leader or favorite project. It is based on how effective that action plan is in moving our company in the direction we want to go.

The individual goals are the results of the action plans we approve and the desires of our people. Every year each action plan is broken down into exactly who is responsible and accountable, who is the champion, and what other departments or functions must serve as enablers to achieve the desired outcome. This step provides the answers to some very important questions so our people can perform at their best: Does what I do matter? Am I doing the right things? What am I trying to accomplish? Where do I fit in this bank? Why are we doing this again? What’s in it for me? How are we doing? And, most important, how am I doing?

Assessment is Step 6 in the continuum, and this happens at all sorts of frequencies, based on the needs of the area being assessed. We may, for example, look at vision once every two years, but we might look at individual accomplishments in a project daily or weekly.

Measuring is key. We celebrate when a department achieves 100% initiative.
Our strategic planning process, continued

completion in a year. We concentrate on areas where too many initiatives have been planned or abandoned altogether. We measure against the desired impact of a project as well as learn what could have been done better or differently the next time.

Flexibility and responsiveness

The summer of 1999 was a difficult time for our community and our bank. The Cerro Grande fire that swept through Los Alamos destroyed 280 homes and led to complete evacuation of our town for six days. As a result, the year 2000 had the potential to be the worst year in our thirty-seven-year history; instead, it turned out to be the very best year.

The 2000 and 2001 strategic plans were not normal ones—we needed to assist our neighbors in rebuilding their homes. But our strategic planning process was the same, except for where we made improvements along the way. We could never have crafted a strategic plan in advance to take into account such a catastrophe. But we could deal with it because our culture and core values include empowerment, public responsibility, a sense of community, valuing people, flexibility, and innovation.

The process yields good business results

The ability to continuously achieve good business results was our motivation for adopting the Baldrige process—we saw that 45% of the score comes from business results, and we believed that following the Criteria would get us there. Our strategic plan focuses on the long-term sustainable profitability of the company through growth. We have been able to maintain double-digit income growth while growing our company in excess of 15% per year—we know from experience that the Baldrige Criteria work. We know that to compete with larger banks we have to provide better value to our customers. We are confident we can do that with our service, but price is also a customer driver in determining ultimate value. That is why efficiency is so critical to our long-term success.

Extraordinary people

If we can continue to operate as a bank that spends $5 million less than other banks our size, we can not only survive but flourish. We spend just forty-nine cents of every dollar of revenue to operate our business; our competitors spend sixty-five cents. Our most significant cost is our people—and rightfully so, as they are the difference that makes us successful. Processes, buildings, and technology are great, but without dedicated, focused, passionate people we are just another business. We used to say that we are ordinary people accomplishing extraordinary things. I have to tell you, these are some extraordinary people.
Customer and Market Focus

Catherine G. McClard, Vice President, Customer Service—LANB was established with a strong commitment to its community. At a time when bank mergers had become the norm, we remained true to our founder’s vision to remain an independent, responsive, locally owned bank.

LANB serves three customer segments—consumer, commercial, and government (most notably Los Alamos National Laboratory and its contractors). Geographically, our major markets are Los Alamos and Santa Fe; however, we also serve customers in other New Mexico counties, and other states, through our phone and internet banking services.

Recent surveys indicate that we have 66% of the market share in Los Alamos and 6% of the market share in Santa Fe. While the 6% may not seem like much, we started in 1999 with 2% of the market and are proud of the 300% increase.

LANB utilizes a third-party organization to poll customers in Los Alamos and Santa Fe counties. The agency uses non-leading questions to reduce bias and improve the accuracy of the findings. The survey questions are directed to both our customers and our competitors’ customers. We commission the surveys on an annual basis, alternating between the two counties. The surveys created a baseline and provide a valuable reality check.

Knowing customer needs

We use several different strategies to identify customer needs:

- **Listen and Learn Information.** Employees use their daily interactions with customers and potential customers to suggest new products, changes to our current offerings, and improvements in customer service.
- **Market Surveys.** Information provided by market surveys helps pinpoint strengths and weaknesses in our current products and services.
- **Community Involvement.** Community involvement is part of our responsibility as a community bank. Employees volunteer in over 130 organizations, including various economic development and laboratory committees. Participation in these organizations strengthens the community and provides us with insight into future needs.
- **Competitive Marketing Information.** Competitive marketing information keeps us abreast of changing trends nationally and locally.
- **Focus Groups.** Customer and employee focus groups are very useful to gain fresh perspectives and ideas.

Meeting customer needs

Meeting customer needs by offering the products and services they want is only one piece of the puzzle. Providing them in tandem with excellent customer service is vital. In the real estate and retail business the three most important words are location, location, location. At LANB they are service, service, service. Every decision that an employee makes is based on the impact on our customers and our corporate objectives. Can we make every customer happy? No, but we can treat them fairly and with respect.
Meeting customer needs, continued

We empower employees at every level of the bank to provide that excellent customer service. We want decisions to be made at the earliest contact point possible. Everyone—our tellers, bookkeepers, even our janitors—can waive a loan fee, refund a charge, order free checks, or whatever they think it is going to take to provide that excellent customer service.

Technology plays an enormous role in our ability to provide excellent service to our customers. We upgraded our computer system, in the mid-1990s, to a relational database, and we introduced our internet banking service in 1999.

We use several of the same methods to measure customer satisfaction as we do to identify customer needs—market surveys and listen-and-learn information provide direct data about customer satisfaction, and dissatisfaction. Dissatisfaction, more commonly known as complaints, is measured and analyzed for operational improvements through a Customer Relations Team and our Quality Council. Quality Council has representation from all areas of the bank, and is able to react quickly and positively to situations causing service failures.

Surveys show that 83% of our customers are very satisfied. This exceeds the average for banks by over 50%. It is clear that banks, as an average, are not pushing us to do better, so we further compare ourselves against a key competitor and a respected Baldrige winner—and we still exceed customer satisfaction by over 10%. We also believe that customer satisfaction does not tell the whole story and is truly a lagging indicator of customer perception.

We measure customer loyalty by the number of relationships per customer. As Figure 5 shows, 30% of our customers have five or more relationships. The national average is 6%. Almost 50% of our customers have three or more, compared to the national average of 26%. In our opinion, more is definitely better.

We create loyalty by building relationships. We try to be extraordinary people building relationships to last for our customers, employees, and investors. We tailor service to match the customers' needs. We provide high-retention products such as mortgage loans and high-yield certificates of deposit. We actively cross-sell conveniences such as ATMs, phone service, and internet banking services. We build community relationships through direct participation in the organizations, sponsorships, and event participation. Most important, we know that these people are not just customers; they are friends, neighbors, and our families.
Introduction

Information and Analysis

Timothy O. Doyle, Vice President and Chief Operating Officer, and Monie Hardwick Blum, Vice President, Mortgage Loans—At our first Information and Analysis meeting, in 1998, we listed the bank’s current measures. Over five flip charts were quickly filled with items that we measured (we are a bank, so we counted everything). It wasn’t until we stepped back and assessed our system of measures that we had our breakthrough. We did indeed measure a lot of things, but our bank is about much more than the things we were counting. We then went back through our strategic planning process and changed the question from what could we measure to what should we measure, why, and how will we use those measurements to make LANB stronger?

Discovering the value of alignment

As we began using the Baldrige Criteria, we discovered the need to focus on alignment. Our measurements—the information that we gather and analyze—must align with our vision, mission, values, and standards. So we began to align our measurement system with the rest of the Baldrige Criteria. This was a major breakthrough. It enabled us to focus our measurements on what really matters.

Now our three corporate objectives (Service Excellence, Individual Achievement, and Financial Performance) must align with our mission statement. By achieving all three corporate objectives we have a high-performance bank. Our people learn that if something looks like it will be good for the customer, employees, and the financial performance of the bank, then just do it. When I started using this as a decision-making rule, it made things much easier and much clearer. What we now strive for in everything we do, including information and analysis, is alignment of measures to achieve the corporate objectives and a high-performance bank.

Setting measurable goals for objectives

For each corporate objective we set measurable goals. For the corporate objective of Service Excellence we have goals that keep us focused on employee product knowledge and customer satisfaction. We establish a system that measures progress toward achieving each goal. For the goal of employee product knowledge, we measure results through product knowledge testing. For the goal of customer satisfaction, we measure results using feedback reports, the number of relationships per customer, and independent customer surveys. These surveys have also given us a bank of information for product development and product enhancements.

The second corporate objective is Individual Achievement. We want employees to have a career at the bank, not just a job. Our first goal, employee satisfaction, is measured through retention and independent employee surveys. Our second goal, employee development, is measured by training hours per employee and internal promotions.

Our third corporate objective, Financial Performance, has measurable corporate goals supported by measurable department plans, supported by measurable individual performance goals. This process creates alignment of individual perfor-
Setting measurable goals for objectives, continued

mance at every level with department goals, and with the three corporate objectives. High performance is realized when actions accomplish all three objectives.

We measure what affects each corporate objective, making sure that what we measure and analyze really matters for performance excellence. Our vital three corporate measures—net interest margin, efficiency ratio, and mortgage loan servicing—track what really matters for our bank. These three are so vital to the health of our organization that we measure, analyze, and monitor them daily. Any fluctuation is thoroughly analyzed and completely understood.

Net interest margin is essentially the difference between what we pay for deposits and what we earn on loans. A small change of 0.1% affects annual profits by $700,000 on assets of $700 million. We manage net interest margin by keeping it within a very narrow range. A margin that is too high leaves the bank susceptible to price competition. A margin that is too low may not provide the profitability needed to meet targets and shareholder expectations.

Efficiency ratio is essentially the percentage of income used for administrative expenses—supplies, salaries, rent, depreciation, utilities, things like that—what it takes to operate the bank (lower is better). The efficiency ratio provides a glimpse of how hard and effectively our employees work.

Our efficiency ratio, at 50%, is an industry best practice (the national average is about 66%). We believe that our efficiencies are a result of a commitment to organizational and personal learning, individual achievement through empowerment, and good leadership. When we empower employees we get more efficiency; we’ve learned that over and over. We pay our employees more than the industry norm, and their performance far exceeds the industry norm.

Our efficiency allows us to keep income at acceptable levels for regular banking services without constantly charging customers irritating and unexpected fees. We do, incidentally, have a competitor that has an efficiency ratio that is coming close to ours, but they have been driving down costs through mergers and acquisitions. Often mergers and acquisitions result in customer dissatisfaction, employee layoffs, and other problem issues.

Our third vital measure is mortgage loan servicing. Throughout the history of LANB there has been a major emphasis on mortgage lending because it has been such a major need in our community. After we make a mortgage loan we sell the loan to our partner. We do this for two reasons: (1) it frees up that money so that we can immediately loan it out again, and (2) it allows us to provide our customers the most favorable interest rate for up to thirty years without the interest rate impacting the bank’s performance. For example, imagine we made a mortgage loan today at 7.0% for thirty years. It would not be good for our net interest margin if three years from now economic conditions dictate that we must pay 7.0% to our depositors. So we sell the loan to our investor, but we retain the servicing of the loan and the relationship with the customer. In other words, after we sell the loan, we continue to handle the customer’s payments and we handle their escrow for homeowner’s
Setting measurable goals for objectives, continued

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insurance and property tax. Our partner pays us to provide this servicing, and this is the bank’s primary source of fee income because of the size of our mortgage loan portfolio. Through this process we impart value to our customers and a consistent income stream to the bank. We dominate the mortgage market in Los Alamos.

Use of information systems

Over the years LANB has invested in cutting-edge information systems. We believe that state-of-the-art systems are a critical factor in our performance capability, and a major component of an effective measurement system. Our systems give our employees the information they need to provide exceptional customer service and make decisions at the lowest possible level. Our systems give employees the tools they need to do their jobs quickly and accurately, and they give management the ability to gather information quickly and make changes when opportunities for improvement arise.

Although we have many specialized systems, we will discuss three: (1) client-server relational database, (2) assets and liability computer simulation model, and (3) balanced scorecard software. The client-server relational database serves as a warehouse for customer information. We make it available on every employee’s desktop. Employees can access a customer’s account. Notes can also be added, which helps us give more sensitive service to our customers. For example, following the Cerro Grande fire we were able to merge our county database of homes with the homes that were lost in the fire. The database allowed us to add comments to those customers’ accounts. We were able to provide sensitive service to those customers, and at the same time we were able to monitor the bank’s collateral interest in those homes. This database gives us the agility we need to quickly tailor our products to meet our customers’ needs.

In 1998, mortgage loan interest rates approached a thirty-year low. Feedback from interest rate surveys told us that our pricing was not as competitive as our local competition’s. We could not run the risk of customers’ refinancing with another lender because of the impact this would have on customer satisfaction and the income stream that mortgage loan servicing provides to the bank. We moved quickly and negotiated with our partner a reduced documentation refinance program. Using our relational database we were able to identify those customers who would benefit most from this streamlined product and sent a letter to those customers.

The results were very satisfying. We set out to maintain our mortgage loan portfolio, and instead we increased it by 16%. At the same time 85% of our customers rated our service as excellent, and 14% rated our services as good. No customer rated our service as needing improvement. However, we will work on the 14% of customers that rated our service as good. We want to increase the rating to excellent.

To help us focus on long-term sustainability, we use an Asset & Liability computer simulation model that forecasts future financial results. With the model, alternative strategies are compared and analyzed. It reflects internal and external conditions, and it helps us manage net interest margin.
Use of information systems, continued

We believe that if we want to empower employees we must give them the tools to succeed. This computer Asset & Liability simulation model helps us forecast the future. We input detailed customer-account information; internal pricing strategies; internal policies; and economic, regulatory, and consumer behavior into the model. We run simulations: What would happen if interest rates rise? We can increase and decrease dollar amounts, move to or from the stock market, consider loan volume increases or decreases— we can put just about anything we can think of into the model, run a simulation, and see the results.

We use the model to consider future possibilities, projecting results monthly, and going out five years. The model keeps us focused on the future. It improves our ability to keep net interest margin within a desirable range. For example, in 1998 the bank had to increase funds to meet growing loan demand. There were three options: (1) borrow the funds, (2) obtain public deposits, and (3) increase customer and consumer deposits. Using the model, we were able to forecast the financial impact of each option and make a well-informed decision.

New products emerge from the modeling. One is the CD Plus, which offers a higher interest rate to our customers. Also, the bank has a large portfolio of adjustable rate mortgages that reprice annually. The model led us to set a one-year term to allow annual repricing, which protects the bank’s net interest margin.

The balanced scorecard is a valuable tool. It integrates financial as well as non-financial measures into an overall evaluation of performance. The balanced scorecard has measures at levels throughout the entire organization. It includes measures for each employee, customer, and sub-process level. These measures feed into measures at department, product, and process levels, which feed into measures of the bank’s three key processes, corporate objectives, and the overall health of the entire organization. The measures flow up and down throughout the organization and show individual performance, department performance, and organizational performance.

Each measure on the scorecard has desirable parameters. The scorecard is designed to highlight non-compliance with the parameters. If the results are in the desired parameter range it shows up as a green box. If results are slightly out of the parameter range, it shows up as orange, and if it is further out it will show up as red. We can quickly glance at it and see the health of the organization, much like the dashboard on a car. This is an extremely valuable tool for every employee, as well as for executive management, to detect and correct undesirable results at the lowest possible level.

Information sharing

To empower our employees, and to strive for organizational and personal learning, we communicate as much as possible and as often as possible. There is very little information at the bank, if any, that isn’t shared at all levels within the organization. All corporate data is available through numerous channels. Quality Council, our final decision-making authority, is open to all employees at the bank and meets during non-business hours, giving every opportunity for employees to attend. We
Information sharing, continued

have quarterly bank-wide meetings and weekly department meetings where we review key measures and progress toward our corporate objectives and goals. We publish a monthly newsletter. And we use e-mail to get information to employees. All of the information and measures that we gather are available to our employees on public directories and on our intranet.

Process Management

Timothy O. Doyle, Vice President and Chief Operating Officer, and Monie Hardwick Blum, Vice President, Mortgage Loans—When we looked carefully at the complexity of process and systems thinking, we decided that in order to manage processes effectively we needed a broadly inclusive leadership team. The bank’s answer to this need, created in 1988, is our Quality Council.

Quality Council

Quality Council has responsibility for overseeing strategic initiatives throughout the bank. It ensures that each initiative the bank undertakes aligns with the bank’s vision, mission, and corporate objectives. If it doesn’t, the initiative is abandoned. This keeps us focused on initiatives that create value.

Quality Council prioritizes and monitors progress on every initiative, ensures that training is provided where needed, and that needed information is disseminated throughout the bank. When you’re on a team that is doing an initiative, you report back to Quality Council. Quality Council is the final decision-making authority. It drives process improvements.

Quality Council is open to all employees. The CEO and President are standing members. Department leaders are responsible to ensure that there is representation from their department at each meeting. Decisions are by consensus; the president or CEO does not get a higher vote. Once an initiative is approved, the Quality Council will coordinate a team of all stakeholders to implement the initiative.

It meets biweekly, before the bank opens for business so that every employee can attend without negatively impacting customer service. Depending upon the initiative, Quality Council may meet at one of our branch locations, such as in Santa Fe, so that those employees can be involved. It is truly an opportunity for every employee in the bank to be involved in leadership, in initiatives, and in the development of our bank.

Quality Council provides organizational learning and leadership development. Those who want to be leaders sit in on Quality Council. Even if they are quiet, they can learn a lot about the bank and how to be a leader in our organization. It is rewarding to watch the idea flow, and the interaction between employees and management, while employee participation grows.
Encouraging people to express their thoughts

Sometimes a senior manager will express a view contradictory to what the President or CEO says. We do this because we want everybody in our organization to know that their opinions, their ideas, and views matter, and will be heard. It is important that all 184 people that work for LAN B know that they can express their idea. Expressing a contradictory or different view lets people see that it's okay to do that. Sometimes an employee has a really good idea, especially when it involves something that she or he does every day at their job. A teller knows more about the teller function than the CEO, the President, or C O O, and can provide valuable input on certain things. Quality Council has been and will continue to be an evolving process at our bank.

The project template

A project template is a framework for the implementation of bank initiatives. This has enabled us to implement a systematic approach to all projects, from the implementation of new technology and new products to improving current processes. It also ensures the alignment of projects and initiatives with the bank’s vision, mission, and corporate objectives.

Using the template, we assemble a team of all stakeholders to analyze the impact of the project on the organization as a whole. The impact that the project will have on our customers is closely examined, using customer feedback and customer surveys. A cost-benefit analysis is performed, and a budget is established. The team also assesses alternative options. Once these issues are addressed, an action plan is developed that includes testing, training, and a timeline for the implementation of the project. Milestones and goals are established, and progress is reported to the Quality Council on an ongoing basis. Every project template is available on our public directories. Each template includes a “lessons learned” section to enable other people in the bank to learn from this improvement initiative.

Identifying key processes

Another big improvement step we took on our quality journey was to focus on and define our key processes. Until we did this, our process improvement efforts were very scattered—because we lacked a clear understanding of the processes that are critical to the core operations and success of LAN B.

One of our most productive workshops was when we met to identify and define our key processes. Our assignment in advance of the workshop was to prepare a list of what we considered key processes. We soon had flip charts all over the room itemizing individual functions, but we had no focus on the core systems of the bank and how they interact and align with each other.

One important discovery we made is that having more than seven processes produced so much systems complexity that management could not summarize the processes and the relationships among them. How, then, could we expect our employees to work effectively and efficiently in such a system? We also knew from surveys that our employees knew and understood our vision and our mission, but they didn’t understand how their job fit into them.
Identifying key processes, continued

Through prioritization and simplification, we determined that there are three processes that are critical to the success of our bank: (1) generation of funds, (2) investment of funds, and (3) other income. This has given us the focus and alignment we needed to improve the core systems and vital measures within our bank.

We also found that employees can easily understand these processes and how their daily tasks support the processes and lead to achieving the bank's objectives.

Generation of funds is the process of generating money within LAN B, primarily through customer deposits. Investment of funds is the process of investing the money that we generated, through deposits primarily, by loaning that money to borrowers. Other income is primarily generated through mortgage loan servicing fees. Identifying these three processes was a major breakthrough for our bank. Now all of our process design and improvement efforts focus on these processes and their interaction with each other.

Measures

After we identified the three key processes it was important to identify performance measures and goals for each of them. Our key processes are carefully managed through continuous attention to performance measures. For example, because we generate funds for investments primarily through deposits, deposit growth is measured daily. Our deposit growth has greatly outpaced our local competition's. Our growth was 40% in 1998 and over 60% in 1999, while our local competitors' growth was about 20% in both 1998 and 1999.

The interaction between generation of funds and investment of funds is critical. Our bank must maintain the correct balance. We best serve our customers, community, employees, and investors when we invest dollars received in deposits back into the community in the form of commercial, consumer, and mortgage loans. We strive to maintain a loan-to-deposit ratio that is between 95% and 100%. This ratio is so critical that it is measured daily. Any fluctuation is thoroughly analyzed and understood.

LAN B meets or exceeds national peer and local competition in its ability and commitment to fund local loan demand. There was a decrease in the ratio in 2000 due to a large increase in deposits from insurance proceeds resulting from the Cerro Grande wildfire. Since then, action plans were put in place that brought the ratio back to its current level of 100%.

Our main source of fee income is generated through servicing the mortgage loans that we originate. On a monthly basis we measure new mortgage loan volume and the outstanding mortgage loan portfolio. We are the largest mortgage lenders in northern New Mexico. We dominate the market in Los Alamos County with 80% of the business. In Santa Fe County we were in the top-three lenders before we even opened our branch there. This is all made possible by efficiently managing our processes. Our employees service far more assets than our competitors—$7 million in assets compared to the national average of $3 million. This is why our efficiency ratio is exceptional and an industry best practice.
The road ahead

The Baldrige Criteria have been and will continue to be a driving force at LANB. We have used the Criteria to align all of our processes, actions, and initiatives with the bank’s vision, mission, and objectives. As we’ve moved forward on our quality journey we’ve engaged the creativity and enthusiasm of an exceptional group of employees. Without the high quality of input and support from all of our employees, we would not have reached many of the milestones along our journey.

Human Resource Focus

Introduction

Fidel L. Gutierrez, Senior Vice President, and Jill Cook, Vice President, Human Resources—The bank’s mission and core values form the foundation for our philosophy in managing our workforce. Layers of bureaucracy bog down the process and make for an unsatisfied customer experience, so our organizational structure is relatively flat with few levels of management between the president and the front line.

A focus on relationships

Banking relationships with our customers are built and solidified because our customers do business year after year with the same helpful and competent people. It is easier to exceed our customers’ expectations when an employee has a personal understanding of their banking needs. Because of that, our employee focus is on a career in banking, not a job at the bank. When someone asks a teller what he or she does, we want the answer to be, “I’m a banker;” and not “I’m just a teller.” After all, tellers interact with 90% of our customers on any given business day.

We outline job responsibilities while avoiding rigid job descriptions in order to promote an environment of flexibility. Along the same lines of thinking, we do not have rigid pay scales. Earning potential is not limited by choosing to serve our customers in a similar capacity over many years. We avoid salary matrices that are based on longevity and job category. Instead, we reward employees for performance. While we do have salary guidelines, we make sure they are flexible enough to ensure that supervisors have latitude to reward top performers.

We do annual employee salary surveys to ensure that we are paying competitively, and then we ask, in the employee survey, if that’s how they feel. This gives our people incentive to grow as bankers and better serve our customers, instead of having to seek promotions as the only way to increase their compensation. People get a lot of satisfaction working in this environment.

Developing people and sharing authority to serve customers

To give our customers the best service, our employees have the power to take independent action on the spot. We trust our employees and give them responsibility—a lot of responsibility.

Our employees know that we believe they have good judgment and can therefore make decisions—and they do. As you read earlier, employees decided to waive fees, raise limits, and not return checks during the fire. Even more was done. Our item-processing employees took it upon themselves to call customers who are...
Developing people and sharing authority to serve customers, continued

large employers to make arrangements to run their payrolls. They were even prepared to run the prior week’s payroll just to ensure that the companies got their employees paid during the fire. Everyone, including our CEO and President, serves customers. We are the largest independent bank in New Mexico, and our President still keeps his office in the main bank lobby. He’s seen by employees every day assisting customers.

We provide an environment for growth through cooperation and collaboration. Employees are given the opportunity to learn about other areas of the bank by being on a cross-functional team that is established through Quality Council.

Employees are coached about career paths as a part of our performance appraisal process. It’s very important to us that employees know what opportunities exist and that these positions are open to them. We encourage employees to take advantage of our internal job-posting program. All open positions are posted internally before external applicants are considered.

Nearly all of our officer positions are filled from within. Bank growth also results in many opportunities for employees. Employees understand that by contributing to the growth and success of our bank, their planned career paths can become a reality.

Showing employees where they fit in the organization, and how their contribution helps the organization achieve its mission, improves cooperation and collaboration. One of the biggest revelations we had from our employee survey was that our employees understood our vision and mission, but did not relate them to their individual jobs. We’ve been successful in changing that through training, and through our performance appraisal process.

While banking may seem complicated to a new employee, we’ve been successful in reducing complexity by organizing our bank processes into three basic functions. We discuss how these functions work, and how they work together. Then we explain how the new person’s job fits into that scheme. This helps the new employee to immediately understand their role. Our performance appraisal process further demonstrates where employees fit in the achievement of overall bank goals—and ultimately our vision.

The process begins with employees setting their own goals, aligned with department goals and overall bank goals. Employees indicate their short- and long-term career goals, as well as specific training needs or desires. Employees also complete a self-assessment of their strengths and opportunities for improvement in the areas of internal and external customer service, and technical competence. Supervisors and employees meet to discuss performance, strengths, and areas for improvement, and validate that the employee’s goals are in alignment with overall bank goals.

The training needs identified in the employees’ performance appraisals are used to develop and prioritize training needs and how to meet them. We have found that when employees set their own goals, they are more enthusiastic about achieving them and we learn about their true interests.
Developing people and sharing authority to serve customers, continued

Because goal setting and developing future career paths are unfamiliar to many new employees, we conduct training meetings with all new employees. First, we talk about why our performance appraisal process is designed the way it is. We then discuss what our corporate goals are and how they lead to our vision. We talk about the processes departments go through each year in setting their goals and that they will be involved. Then we talk about their individual goals. We discuss employees' doing their own assessment on whether they met their goals the previous year. So, it's important to make the goals measurable and attainable, and still require the employee to stretch. We help employees with their goal setting by suggesting some, such as cross-training in their department or, for customer service employees, looking up and greeting a customer by name the second time they meet.

Open communication

Open communication means sharing all information. We review financial information and results of customer surveys at employee meetings. Results of our feedback reports, however painful, from Quality New Mexico and Baldrige, are shared and posted on the bank's intranet. Our annual employee opinion survey is shared and used for improvement.

In addition to traditional means of communication, such as e-mail, newsletters, and our intranet, we have a forum for employees to speak directly with our CEO and President. “Breakfast with Bill” and “Snacks with Steve” meetings are for all employees. These meetings are open forum round-table discussions on any topic an employee would like to talk directly with the President or CEO about. Being a customer-driven organization, we don't hold meetings during customer hours. We also have guidelines for meetings to keep them productive and on task. This is critical because we offer extended banking hours. If a meeting runs into banking hours, our employees remind each other, “It's time to open the bank and serve customers.” In fact, to exceed the expectations of our customers, one of our employees came up with the idea to open the bank five minutes early every day.

Meetings do not have to be formal. We have an open-door policy for informal meetings. We encourage all employees to always express ideas, concerns, and comments to their supervisor, the President, CEO, HR manager, or our Quality Council at any time.

Benefits and recognition

Our benefits philosophy is when LANB wins, everyone wins. Nothing is more indicative of this philosophy than our profit sharing and employee stock ownership plan (ESOP). After an eligibility period of six months for ESOP and two years for profit sharing, every employee is automatically in these plans. Presently, our employees own over 9% of the bank, which equates to nearly $13 million. Our vision is for employees to own 30% of the bank by 2005, having made many millionaires in the process. These two incentive plans are key to fostering the cooperative spirit and team attitude that exists at our bank. These plans promote trust, loyalty, and efficiency. Our employees act like they own the place, because they do. We review
Benefits and recognition, continued

financial performance at every quarterly meeting. Employees attend because they are interested in tracking the financial performance of the bank.

We implemented a sabbatical plan in 1998 to promote relaxation and rejuvenation. Twelve employees have gone on sabbatical leave, and all have come back. An additional benefit of the sabbatical is that employees going on sabbatical will train someone to do their work. This benefits the bank because the employee has accumulated knowledge over the years, and they share that knowledge with others.

We have a diverse workforce, with 80% women. There are more women department heads than men, and we’ve been creative in developing benefits to meet as many needs as possible. We have medical and dental care, a Flexible Spending Account (FSA) plan, cafeteria plan, insurance, Employee Assistance Program (EAP), 401(k), life insurance, an option for employees to purchase extra insurance at group rates, and a vacation package that allows up to four weeks of vacation per year.

In keeping with the philosophy driving our profit-sharing and employee stock ownership plan, contributions to these plans have increased by over 50% in the last five years and are equal to about 24% of an employee’s salary. Over the last several years, employees shared in the success of the bank as 7% of pre-tax earnings was paid back to them in addition to their annual compensation.

The bank’s recognition and award program focuses on the bank as a whole, and we avoid rewarding just a few people. For example, we don’t have an Employee of the Month or Secretary’s Day celebration. Instead, we have Employee Appreciation Day. It’s a full-day celebration that includes our CEO and President grilling hamburgers or garden burgers on the bank’s outdoor employee balcony. This year, we had a Mexican Fiesta, complete with mariachi and salsa lessons in the morning.

Employees are also recognized for years of service with gold and diamond pins. Five employees recently reached their twentieth year. We gave them each a week off with an all-expense-paid trip. These people came back with renewed spirits to earn more for themselves and the bank.

We receive numerous letters from our customers thanking us for our excellent service. All letters are shared with employees and published in the monthly newsletter. We also allow time for involvement in community service.

High-performance work begins with hiring the right people. We believe in hiring for attitude and training for skill. During the interview we use our vision, mission, and core values as a foundation for discussion to determine if there’s a good fit. We also offer a referral bonus to employees that refer someone who is hired. This program has been very successful in helping us find and retain good employees. We have hired applicants with a good customer-driven attitude even when we did not have an open position.

To share our expectations with new employees and give them an understanding of what they can expect from us, our CEO and President meet with all new employees on their first day at the bank. This is an important process because it

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Attitude is a key selection criterion, continued

helps new employees understand that every job is important at the bank, from keeping our facilities clean to making million-dollar loans. Our CEO and President also let them know that we promote a fun and fair work environment—including an expectation to smile on the job frequently. Our orientation process also includes a thorough training on our core values, corporate culture, quality journey, and systems training (e.g., e-mails, phones, and our customer database).

A desire to learn is vital

We foster a learning environment. We encourage employees to get the training they need to meet their professional-development and personal goals. We have a full-time trainer on staff. This person compiles the training needs from our employees’ performance appraisals and arranges for classes. In-house training includes, but is not limited to, Windows, Word, Excel, Customer Service, Conflict Management, and Bank Products and Services. When a specific need is identified in a department, such as credit analysis training in our loan department, our trainer arranges for an outside expert to teach the course.

We also encourage employees to take classes outside the bank. We pay 100% up front for all classes and books. And, not only do we pay for the classes, we give employees raises when they finish. We trust the employees to take it upon themselves and have the responsibility to finish the class, which is why we pay up front and not reimburse. The bank also pays for courses needed for professional certifications. For example, we have five certified financial planners on our staff.

Celebrating success

We believe in having fun at work and celebrating our successes. We have weekly massages, an annual picnic, Halloween costumes, many lunches catered in, frequent “wear your LANB shirt to work day,” and a Christmas party. We’ve also taken full advantage of every opportunity to celebrate our quality journey. I recently overheard a new spouse of one of our employees remark, “If I’d known your bank was this much fun I would have married you months ago.”

Benefits of a sense of community

It’s very important to us to be involved in the community. Nearly every dollar deposited to LANB is loaned to borrowers in the communities we serve. We could invest deposits outside the community at a higher return; however, we believe our long-term success is tied to the success of the communities we serve. We take pride in the fact that we are contributing to the economic vitality of our hometown.

Not only do we invest in the community, we are involved. Our employees participate in over 130 organizations that make our communities better. We support this involvement by paying employees for their time. We also pay employees’ annual dues for these community organizations.

Results

Results are what keep it all together. Since its opening in 1963, LANB has never laid off an employee or had a year that has not produced good financial results. As a result of continuing opportunities for our employees, and our focus on
Results, continued

career paths, the average tenure of officers is eleven years, and the average tenure for employees overall is more than five years.

To measure employee well-being and satisfaction, the bank has conducted an annual employee opinion survey for the last fourteen years. We use an independent company that compiles our results and compares them to last year’s and to those of peer banks. We share the results with all employees and then conduct focus groups to gather ideas on how to improve low areas. We’ve used this as a tool to improve our employee benefits package, communications, and performance appraisal, to name a few. We scored higher in 2000 than we did in 1999 in every category.

Journey to Performance Excellence

Steve W. Wells, President and Chief Administrative Officer — LANB’s quality journey has seen many defining moments that have propelled us forward. They often happened without notice in our process of continuous momentum and constant pursuit of excellence.

Our founders, in 1963, saw Los Alamos as a beautiful place to live, work, and raise a family. Their vision was to establish a community bank to finance the homes and livelihoods of others that felt the same way. LANB started with five employees and $1 million in seed capital. We could not have had a stronger vision of what we were to become—a community bank.

We studied Dr. W. Edwards Deming in the ‘80s and agreed with his principles. We understood some and practiced a few. It seems like we were always more intensely focused on what we thought were more important things—growth, profits, and competitors. We tried to do things well, but we simply didn’t have the systems, communication networks, or refined processes. Additionally, measuring something that wasn’t dollars and cents was a foreign concept to us back then. Measure efficiency, satisfaction, and loyalty? How? Better yet, why? We took a step forward in the late ‘80s by forming employee groups called Quality Circles. Quality Circles showed signs of promise, but lacked commitment to a process that would ensure that dialogue was listened to, acted upon, and revisited.

We took another stride forward by becoming a founding member of Los Alamos Quality Network. This became a place to share ideas and experiences and be exposed to quality tools. We visited Motorola University and the Baldrige Quest for Excellence Conference. Our CEO and several employees came back supercharged with ideas and concepts that they had been exposed to and what that could mean for our organization if we became that good at banking. We found that in many areas we were on the right path, and there were many areas where we had a lot to do. How and where should we begin?

We originally thought that we could initiate quality in selected departments and nurture it, and then others in the organization would join in. It failed. Some would say it failed miserably. That failure was another defining moment in our
Journey to performance excellence, continued

quality journey. We saw that everyone had to be involved because each piece relied on the other to produce high quality—from the front line to the bottom line, from the janitor to the CEO. Most important, we had to start. It’s been said that the only real mistake you can make in your quality journey is not to start one.

We’ve had to change some old ways of doing things, which sometimes dies hard in an organization. One was to create a simplified mission statement, one that identifies our three key objectives and what we must do to be successful—exceed the expectations of our customers, our employees, and our investors. We defined five core values that define the structure for our corporate success. We strive to align every action taken with our corporate objectives, which correlates directly with the partners identified in our mission statement.

Service Excellence means that our customers must receive value and outstanding service. Individual achievement emphasizes our focus on careers and not jobs, and our desire to enable employees to become better people because of their work at LANB. Financial Performance means that our investors must be rewarded or nothing else matters. And when every partner benefits from our actions, then we’re performing at our best. We call that High Performance.

Measuring has been one of our greatest strengths and the biggest weakness. At one time, we measured virtually nothing but financial performance. And then we measured everything. Eventually we learned to measure what really matters—the vital three—interest margin, efficiency, and mortgage loan servicing. I don’t mean to suggest that these are the only things that matter. But if these three aren’t on target, nothing else is going to matter. These are key to our survival and the essence of how we operate successfully.

Strategic planning is central to the way we align our daily actions to our corporate objectives to accomplish our five-year plan. The establishment of our Quality Council has been a revelation. It’s a place where all employees can contribute, participate in decision-making, and take leadership roles in corporate action plans. It has provided continuous acceleration to our quality endeavors. Making our employees owners and sharing the profits with every employee pay dividends every day in attitude, service commitment, and employee retention.

Today, we’re the largest financial institution in New Mexico. We presently employ 184 of the hardest working, best-focused individuals in the banking profession, and we operate in just three communities with our community bank philosophy. And that $1 million in seed capital? It’s now worth $77 million in equity value.

Baldrige principles have had a great impact on our organization. I can’t tell you how many times I see or hear an employee action that convinces me that Baldrige principles have changed us far more than we could have ever imagined. If I have yet to convince you that following the Baldrige Criteria has made a difference in our company, and can make a difference in your company, let me show you some even more tangible results we correlated to our commitment to quality.

We have learned that the real test of customer satisfaction is customer loyalty.
and customer retention. We like what we're seeing here: 30% of our customers have five or more relationships with us, as compared to the national average of 6%.

Our net income has increased by 60% in the last five years. Efficiency is a key measure for us. Every employee knows that it controls our long-term success. It provides our ability to compete on thinner margins and to go toe-to-toe with the mega-banks of America. We spend just forty-nine cents of every dollar of revenue to operate our company, while our competition spends sixty-five cents. That means we spend $5 million less than our competitors to operate our business. That's what best-in-class means.

In 1999 we were able to pay our employees $1.1 million in cash dividends and stock, because they're focused and efficient. Where will we go from here? We're committed to guard against corporate complacency. We face increasing competition and smarter competitors. We still have to question everything and be willing to change anything in an effort to get better. And, most of all, we have to welcome those changes as opportunities to reach a potential that we keep redefining.

Author information

William C. Enloe, Chairman and Chief Executive Officer, began his career with LANB in 1971. In 1975 he was promoted to Vice President, and in 1978 he was elevated to President. In 1994 Enloe became Chairman and CEO. He also serves as President of Trinity Capital Corporation, the bank's parent company.

Steve W. Wells, President and Chief Administrative Officer, began his banking career twenty-two years ago, and has been with LANB since 1985. He serves on the bank's board of directors. Wells also teaches Technology Management at Western States School of Banking.

Catherine G. McClard, VP, Customer Service, has twenty-two years of banking experience. She began her career with LANB in 1995. McClard's background in funds transfer and information systems has allowed her to make major contributions to the bank's customer service practices.

Timothy O. Doyle, VP and Chief Operating Officer, has twenty years of banking experience. He began his career at LANB in 1990. In 1994 he was promoted to Vice President/Cashier, and in 1998 he was elected Chief Operating Officer.

Monie Hardwick Blum, VP, Mortgage Loans, has twenty years of banking experience. She began her career with LANB in 1995. Blum serves on the board of directors of the Los Alamos Housing Partnership and is a member of the local Rotary Club.

Fidel L. Gutierrez, Senior VP, began his career with LANB in 1987 as Audit/Compliance Officer. In 1992, he was promoted to Senior Vice President of Bank Operations. In 1999, Gutierrez was chosen to head up the bank's new office in Santa Fe.

Jill Cook, VP, Human Resources, began her career with LANB in 1987. She has held several positions, including Collector, Credit Analysis Officer, Loan Review Officer, and Assistant Vice President. Cook has played a key role in the bank's Quality Council.
Dana Spicer Driveshaft
2000 Malcolm Baldrige National Quality Award Winner

Authors
Joe Sober, Vice President and General Manager
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Note: All information contained herein was accurate as of the date of the filing of the 2000 Malcolm Baldrige National Quality Award application.

Background on Dana and Spicer Driveshaft

Business overview

Joe Sober, Vice President and General Manager—Picture for a moment personal travel at the turn of the twentieth century. Deep rutted dirt roads, bicycles, horses, horse-drawn carriages, and a few new monstrous things called motorcars. Big, loud, lumbering things. And perhaps worst of all—chain and sprocket driven! The first automobiles were propelled by nothing more than oversized bicycle chains flapping in the under carriage, slipping, seizing, and breaking. Chains made the future of the automobile seem like an impossible dream.

Then an engineering student, Clarence Spicer, had a design for a mechanical joint that could convey torque from a source of power to a remote mechanism, even when those two joints were at angles to each other. In 1903 Mr. Spicer received a patent for his invention, which quickly caught the attention of several automobile developers who recognized the value such a joint would add to their vehicles. So in 1904 Clarence left college to form the Spicer Manufacturing Company. Good-bye chains, good-bye sprockets, and hello to the future of personal motorized travel.

Spicer Manufacturing grew rapidly. However, Mr. Spicer proved to be less of a businessman than an engineer. In 1914 he enlisted attorney and financier Charles Dana to help him manage his company. Mr. Dana knew little about manufacturing but he was ahead of his time in management style. Most of all, he was committed to employee education, benefits, and ideas. Soon he had established an employee stock purchase plan, a patent award program, and a course of seven employee lectures titled “Modern Production Methods.”

Second only to his respect for people, Mr. Dana prized growth. Over the next thirty years he added many new product lines, so many that it caused confusion for customers as the distinction between them and the Spicer name became blurred. To alleviate this confusion, the Spicer Manufacturing Company was renamed Dana Corporation in 1946, in honor of Charles Dana. However, the Spicer name lives on in the products and division Clarence Spicer founded: Spicer Driveshaft.
Background on Dana and Spicer Driveshaft, continued

Corporate values, directions, and expectations

The next fifty years was marked by a series of strategic movements— diversification, globalization, decentralization, and market orientation. The results of these initiatives can be seen in the Dana Corporation of today. Dana is the largest independent supplier of vehicle components in North America. It consists of four strategic business units, 300 major facilities, and 70,000 people in thirty-four countries. Annual sales are about $10.3 billion. We have gone sixty-four years without a missed or reduced dividend payment.

Why is Dana consistently rated among the world’s best managed companies, most admired companies, and best places to work for? To explain this, one must look deeper into the organization. To begin with, Dana Corporation is not just a holding company to its various divisions. It is the source of underlying values, directions, and expectations. These are embodied in a series of four single-page documents.

The first of these, The Philosophy & Policies of Dana, was written more than thirty years ago to articulate the company’s core values. It is the primary instrument guiding the behavior of all Dana people globally. This was soon supplemented with a second document, The Dana Style. As the name implies, it is the way we apply Dana values to the benefit of our stakeholders every day. The primary tenet of the Dana Style is that people are our most important asset. We seek to develop people, giving them the structure to grow and contribute to the best of their abilities.

This style of management is further enhanced by a “promote from within” policy. All Dana people start in entry-level positions and move into more responsible positions based on their performance. The only exceptions to this policy are those who come to Dana through acquisitions. Individually, these concepts break down the barriers of bureaucracy. Collectively, they form the foundation of a culture that has led Dana to a position of global market leadership.

In 1998, Standards of Business Conduct was added. Dana has recently added 50,000 new people to its ranks and, as this occurred, leadership wanted to ensure that everyone clearly understood what was expected in terms of ethics and behavior. This document provided greater detail about the legal and ethical issues associated with conducting business.

The most recent leadership document, Transformation 2005, was added to outline the basic strategic directions and targets of the corporation. It contains a summary of the five-year corporate strategy, providing all Dana people with a generalized view of where we are going, how we will get there, and how we, as individuals, can contribute to it.

Together, these four documents set forth values, directions, and expectations of the corporation. Dana’s guidance does not stop there, however. It also provides a company-wide quality process to deploy them. The Dana Quality Leadership Process (DQLP) is patterned after the Baldrige Criteria and serves as the business model for all Dana divisions to manage, evaluate, and improve their operations.
Spicer Driveshaft overview

Spicer Driveshaft is the largest independent supplier of driveshafts and related components in the world. We produce about six million driveshafts a year. To add additional value to our products we specialize in several engineering services.

Globally we have forty-one facilities that operate in nineteen different countries. We employ about 8,500 people. U.S. operations (included in our 2000 Baldrige Award application) include seventeen facilities and 3,500 people. We are the second Dana business unit to earn a Baldrige Award. Dana Commercial Credit Corporation received a Baldrige Award in 1996.

Our key market segments include the light vehicular market (passenger cars, pickup trucks, vans, and sport utility vehicles [SUVs]) and the heavy vehicular market (Class 6, 7, and 8 trucks). We enjoy the majority share in these markets. Our third largest market is off-highway vehicle. This includes driveshafts for construction, agriculture, and industrial applications. Within these markets, we have a dominant role in the related after-markets, supplying both the original equipment manufacturers as well as numerous distribution centers. Our remaining sales come from shipments to our global partners and sister divisions.

Spicer Driveshaft leadership and support functions are coordinated through our world center of engineering and technology, located in Holland, Ohio. A satellite office in Farmington Hills, Michigan, helps to ensure our Detroit-based customers easy access to engineering and sales support. Our five manufacturing plants are positioned to ensure rapid, uninterrupted supply to our customers.

We manufacture about 95% of the components that are ultimately assembled into our driveshafts. Our five regional driveshaft centers are located near, and dedicated to, one or more specific customers to allow for just-in-time assembly, delivery, and line-set services, which has a big impact on keeping our customers' inventory low. Our information technology systems are administered at our data system information center in Marion, Indiana, which houses our mainframe, control, and client-server system.

Leadership

Spicer Driveshaft's leadership system starts with its vision statement:

Spicer Driveshaft is committed to the pursuit of excellence as a way of life. We will be the global leaders in providing driveshafts, related products, and systems. We will always strive to exceed our stakeholders' expectations by being the leaders in innovation, quality, and responsiveness.

We view this as a journey and a way of life. To support this vision statement, Spicer Driveshaft operates with three leadership councils: the Quality Council, the Manufacturing Council, and the Strategic Business Council (SBC).

Our Quality Council is chaired by me, and consists of my direct reports, who cover all of the core disciplines. The Quality Council oversees all policies and the general welfare of our stakeholders, and it verifies policy deployment and business results of the division.
A system for leadership, continued

Supporting the Quality Council is the Manufacturing Council, chaired by the director of manufacturing. Members include the Quality Council members who are plant managers, and other key operations personnel. Its focus is on organizational needs, competitive performance, and operational issues at a facility level.

The third part of our leadership system is the Strategic Business Council, which consists of my direct reports at our division office. Its primary function is to identify new business opportunities, assign performance measures, and formulate approaches for achieving them. It is also charged with overseeing our strategic business plan (SBP), which includes measuring the deployment of the plan on a quarterly basis. The director of manufacturing co-chairs this council with me.

The work of the Quality Council

The Quality Council sets direction through the strategic business plan and annually establishes performance expectations. The strategic plan sets forth the long-term expectations of stakeholders and opportunities for growth, while performance expectations link corporate objectives to division objectives and, ultimately, to individual facilities. Senior leaders communicate both of these tools throughout the division by way of postings and formal presentations. We also use our strategic planning process to create, communicate, and deploy a focus on creating and balancing value for all stakeholders. Each key business driver is aligned with a stakeholder, and then assigned strategic objectives and action plans.

To verify that we are making positive things happen for stakeholders, each member of the Quality Council submits a monthly report highlighting the impact of his or her operation on stakeholders. Consolidated results are reviewed at Quality Council meetings. Review of organizational performance is conducted by the Quality Council. The information evaluated includes key business drivers (KBDs), performance and total quality management indicators associated with all key goals and initiatives. These are tracked and reviewed at each monthly meeting of the Quality Council.

When performance levels deviate from target they are assigned to the manager of that discipline, who serves as the champion to reverse this trend. The champion formulates an action plan that is disseminated to his or her area of operation for implementation. Progress toward improvement is then reviewed at subsequent Quality Council meetings until targeted levels of performance are achieved.

The Quality Council evaluates and approves the effectiveness of our leadership system by reviewing organizational performance and employee feedback. Principal inputs include a Quality Culture Survey (QCS) providing annually quantifiable input from all Spicer Driveshaft people relative to the leadership effectiveness. We use a National Customer Satisfaction Survey (NCSS), which measures Spicer Driveshaft effectiveness in fulfilling our customers' expectations.

The strategic business plan establishes value, direction, and performance expectations for key action items. Progress on these action items is compared to the plan at Quality Council meetings. We also use the management review part of QS-
The work of the Quality Council, continued

9000 to evaluate the division leadership system as it relates to both quality and performance. Finally, we use senior management performance appraisals to improve individual performance in order to enhance our overall system.

The Dana Quality Leadership Process

A critical ingredient to our improvement throughout the 1990s was the use of our internal DQLP. This improvement tool has provided Spicer Driveshaft with annual feedback reports dating back to 1992. This process is deployed globally throughout Dana, and our senior leadership tracks performance.

Scoring is done on each application by a team of internally trained examiners. Site visits are conducted for divisions scoring above 500 points. Feedback reports are submitted, and the process repeats itself annually. In addition, an annual sharing of best processes is held corporate-wide, and leading divisions are asked to participate.

Employee education

We encourage forty hours of education per year. Spicer Driveshaft has its own instructors for some training, and Dana University is used for select core classes. In 2000, Spicer Driveshaft people averaged 42.5 hours of classroom training.

Employee recognition

Senior managers recognize teams and individuals for their contributions as a way of reinforcing our values and expectations. Recognitions include outstanding achievement, meals, gift certificates, acknowledgment of teams and individuals in facility newsletters, and tributes to teams and individuals during various group meetings. These awards are supplemented with more-structured programs, including a patent award program, stock options, gain sharing, bonuses, and service awards.

Stakeholder impact

The corporate audit staff performs annual financial audits of every facility. To address operational impact, division senior management uses independent organizations to review safety and environmental compliance. The general manager and the division environmental coordinator monitor these reports monthly and review the results with the appropriate facility manager. To further our environmental leadership many Spicer Driveshaft facilities have begun ISO 14001 certification.

Ethical business practices

Ethical business practice is guided by Dana’s Standards of Business Conduct. This document provides direction in all areas of business, addresses all stakeholders, and is distributed to all Spicer Driveshaft people. The dos and don’ts of ethics are posted in each facility, and presentations are made throughout the year.

Dana community

The Dana community consists of our sister divisions and global partners. This includes the Automotive Systems Group, Off-Highway and Industrial Group, Heavy Truck Group, Dana Commercial Credit Corporation, Engine Systems, Fluid Systems, and Aftermarket Group. Spicer Driveshaft promotes knowledge sharing within Dana through joint product and program development, international symposiums, a four-week engineering training course for global partners participat-
Dana community, continued

ing in our corporate task force, and the Best Processes Day.

At Spicer Driveshaft we are blessed with highly committed and motivated people, but it is teamwork that we value most. Teamwork is defined as the desire and willingness to make the other person look good.

Strategic Planning

Kellie Stevens, Supervisor, Engineering Account Manager, and Ron Scheff, Director of Sales and Marketing, Commercial Vehicle, Off-Highway, and Industrial Products—

Strategic planning is the responsibility of the Strategic Business Council. The SBC meets twice a month to analyze our operation and environment, plan and review our strategy, and track performance. The council consists of the general manager, controller, and directors of core disciplines (i.e., manufacturing, engineering, HR, IT, sales and marketing, quality, and regional centers).

Strategic planning is a give-and-take process, with considerable input and analysis originating at the front line. As a result, virtually all operating units contribute to the strategic planning process.

Fact-finding phase

The process begins with an input or fact-finding phase, where we gather data that defines our operating environment and determines key strategic factors. We have numerous sources of input, which comes from three primary directions. The first is from above—short-term and long-term strategic objectives and directives from Dana Corporation, and from our Strategic Business Unit leadership. The second is from outside our organization; this includes data on the capabilities, requirements, and expectations of customers, markets, suppliers, competitors, and society at large. The third source of input is internal; this includes the capabilities, resources, and requirements of our people, facilities, and operating units.

Analysis phase

The analysis phase is the beginning of strategy development. Initially, most input is raw statistical data. For data to be of value to planners it must be converted into information. We rely on the SBC to make that conversion, which it accomplishes through traditional SWOT analysis (i.e., identifying the strengths, weaknesses, opportunities, and threats to our prosperity that result from any gaps between our capabilities and the requirements of our stakeholders). In short, it identifies the differences between what we have and what we need to succeed.

Planning phase

This analysis flows into the planning phase. Results of the SWOT analysis are translated into KBDs. These are the specific fundamental goals we must achieve to grow our business. A series of objectives is then assigned to support the achievement of each KBD. And, finally, each objective is assigned a series of action items or tactical approaches for achieving the objective. These action items include specific timing, cost, and measurement mechanisms for use in tracking progress. All of these elements—KBDs, objectives, and action items—combine to form the foundation.
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Planning phase, continued

for the two key outputs of our strategic development process.

Key outputs

The first of these outputs is the SBP. This plan establishes long-term (three-to-five-year) direction. Concurrent with the development of the long-term direction, the council formulates a second key document known as the Hellweek Plan. In Dana culture, Hellweek is a process, a document, and a period of time. The Hellweek plan consists of detailed financial targets, measures, and projections to support the long-term plan during the coming year. The Hellweek period is that week of each year during which the Hellweek plans of all product groups are submitted to their respective SBP leadership for assessment and approval. The Hellweek plan quantifies short-term operating resources and requirements, sets forth capital requirements and allocation plans, and establishes specific targets, measures, and projects in each key area of operation.

Each operating unit formulates its Hellweek plan in accordance with its own strategic factors. These plans are submitted to the SBC for review and approval. Once approved, they are consolidated by the Quality Council to form the Spicer Driveshaft Hellweek plan, which is submitted to our SBP leadership for its approval. The approved plan is consolidated with those of all other groups within our SBP to form the SBP Hellweek Plan. This is submitted to Dana Corporation for its approval. All SBP Hellweeks serve as key input into the corporation’s strategic plans, and as a foundation for all subsequent planning. Thus the loop is closed, and the cycle is completed.

Deployment phase

The next phase in the strategic development process is the deployment stage. Here each action item in a plan is assigned a council member from the appropriate discipline to serve as its champion. The champions work with the operating units to conduct a risk assessment of the action item and formulate a plan for achieving it. These deployment plans are submitted to the council for review and approval. Once the action plans are approved, all council members are responsible for communicating them to their respective operating units, where they guide activities during the following year and serve as input into future strategic planning. Meanwhile, each champion is also responsible for guiding, tracking, and reporting to the council on the deployment and progress of the action item.

Measuring progress and performance phase

The next phase is measuring progress and performance. This is a continuous activity. Each action item is measured against a series of TQM indicators. These are performance measures that directly reflect the degree of deployment and effectiveness of the plan. For example, plans for exceeding customer expectations are evaluated against the TQM indicators of on-time delivery, customer survey results, and customer ratings, among others.

Evaluation and improvement phase

The final phase of the strategic planning process is evaluation and improvement. Here the planning process itself is continuously evaluated and improved.
Evaluation and improvement phase, continued

according to its impact on various measures of growth in sales, profits, and market position, through the DQLP, which serves as the business model for how all Dana units manage, evaluate, and improve their operations.

The cross-functional DQLP Team, which includes members of the SBC, analyzes the feedback report generated by this process. When the feedback report identifies opportunities for improvement, the team formulates improvement objectives, measures, and action items, which are incorporated into the SBP.

Some details

Now let’s take a closer look at the specific factors we consider during this process. These factors are identified through the planning process itself, and they represent those forces with the greatest influence in determining where we will go and how we will get there. We have identified several factors and numerous sources of input for each factor.

The first set of factors are the objectives and strategies of Dana Corporation. These are passed down to both the SBP leadership and the Spicer Driveshaft Group to serve as a foundation for all planning. Meanwhile, the SBP objectives and strategies for achieving these corporate plans are also passed down to us. Again, while Spicer Driveshaft serves as a key source of input into plan development, these plans are ultimately formulated at the corporate and SBP levels.

The next set of factors are derived from the internal environment in which we operate. The first two—customer requirements and customer expectations—are considered the most important to our planning process. Other key factors define the market environment. Our analysis focuses primarily on trends and conditions related to the overall economy and the vehicular industry in general, including competitors, suppliers, technology, and society as a whole.

Information sources

Intelligence regarding each external factor is obtained through three primary sources. These sources often overlap with one another, thus supplementing the input of the others. The first source of intelligence is customer platform teams (CPTs). There is a CPT for each of our key vehicular customers. These cross-functional teams consist of representatives who have direct contact with their customers from sales, engineering, quality, and manufacturing. They continually garner direct input regarding product and service requirements, quality and performance expectations, perceptions of our quality and performance, and assessment of our position relative to our competitors. Each CPT consolidates its findings to develop specific strategies for each of their respective customers, which then feed into Helmet week planning.

The second source of external input is market strategy teams (MSTs). These teams, like our CPTs, are cross-functional in membership, consisting of people from sales, engineering, quality, and manufacturing. However, unlike the CPTs, which are customer specific, each market team includes members from across customer lines within a common market. For example, members from the Ford, Mercedes, and Toyota customer teams are included in a single MST. These market teams consoli-
The findings of the various customer teams and other sources of intelligence, including internal and external market research, industry association, the trade press, trade shows, etc., to develop strategies for a specific market. These strategies also flow into our hellweek planning.

The third key source of input is our NCSS. This annual survey gathers input directly from existing and potential customers across all market segments and disciplines. Customers rank Spicer Driveshaft and our competitors on a wide variety of attributes, noting the importance of those attributes to them. The individuals surveyed are decision makers involved in the specification, procurement, and quality certification of driveshaft products. Validity and reliability of the data collected are ensured by the use of a third-party contractor who conducts the survey and tabulates the results.

The strategic inputs identified above, including our corporate and SBP requirements and those of our customers, markets, and society, come to us largely from outside our operations. Our primary strategic challenge is to align our own internal strategic factors in such a way as to most effectively address the threats and opportunities that these external factors present us. These internal factors consist of our operating resources and operating requirements.

Operating resources consist primarily of our capital assets, production processes, human resource capabilities, quality, and technology. Our operating requirements consist of the levels of customer satisfaction, growth, and profitability required to remain prosperous and competitive within our given environment. The analysis of these factors results in the identification of any gap between the tools we have and the tools we need to meet the expectations of our stakeholders. Input used in this analysis is derived from three primary sources.

The first is an extensive annual forecasting process through which we identify our future production requirements. Here each CPT identifies, as precisely as possible, its customers, product requirements, and expectations. Particular focus is given to projecting the specific part numbers and quantities that those customers will purchase in the following year. This information is presented to all facilities and business unit managers at an annual forecasting meeting and is subsequently used to drive their respective hellweek plans.

The second key source of input regarding internal resources and requirements is hellweek itself. Each year, after the SBP is disseminated throughout the group, each operating unit formulates its own hellweek plan. These plans identify the resources each unit will require to meet the objectives of the SBP, and are submitted to the SBC for consolidation into the group's hellweek plan. Again, this plan is then submitted to the SBC, where it is consolidated with those of other groups within that SBC, to form the SBP hellweek plan. This is then submitted to Dana Corporation for use in determining its capital investments and asset allocation plans for the following year.
Quality Culture Survey

One final key source of input regarding internal resources and requirements is our annual employee survey, known as a quality culture survey. This survey queries all Spicer Driveshaft people on a wide range of attributes regarding our performance relative to their requirements and expectations, as well as the importance that those attributes hold for them. These attributes focus on employee support, satisfaction, and well-being. The data collected is housed in a common database available to managers throughout the group and is used in planning future resource requirements and asset allocations.

Customer and Market Focus

Spicer Driveshaft defines its key market segments according to established industry standards of vehicle weight, classification, and location. This market segmentation largely dictates our internal organizational structure. It includes:

- Light vehicle—passenger cars, pickup trucks, vans, and SUVs.
- Heavy vehicle—large trucks or buses used to transport freight or people.
- Off-highway vehicles—construction, agricultural, and industrial equipment.

All vehicle manufacturers within these segments are considered potential customers, and each year our sales and marketing departments review the status of these customers to identify the opportunities and requirements they present.

CPTs are the primary tool for managing customer relationships. These teams maintain a specific focus on their customers, one that allows each team and team member to develop a one-on-one relationship with their customer counterpart. Our manufacturing and assembly people support these customer teams by making periodic visits to customer facilities to meet the people who handle and install our products. These visits allow our customers to express concerns, offer ideas for improvement, and have their issues addressed on site and in person.

Due to the dynamic nature of vehicle development, the primary contact requirement of our customers is for frequent personal interface with our sales, quality, and engineering people. This is a good thing because it is consistent with our own need for continuous and direct customer input to identify and understand their key requirements and expectations. Therefore, we employ a wide variety of strategies to achieve that level of contact. These include:

1. Locating our engineering, assembly, and customer support facilities in close proximity to our customers' facilities.
2. Dedicated platform teams, which employ targeted customer strategies and interface daily with our customer counterparts.
3. Participation in trade shows, professional associations, and industry groups to bring our people in direct contact with potential customers.
4. Program-specific meetings between our people and their customer counterparts, to identify customer requirements and expectations.
5. Annual National Customer Satisfaction Surveys to gather input from customers across all markets and disciplines regarding their requirements, expectations, and perceptions of us on numerous attributes.
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Customer and market focus, continued

In addition to these formal approaches for gathering input directly from the customer, we employ several other indirect listening and learning approaches:

1. Market-specific strategy teams, which consolidate customer requirements across markets to identify trends in customer requirements and expectations.
2. Corporate directors of business development (one for each major customer), who participate in customer relationship development activities that enhance our understanding of their requirements.
3. Continual use of new technology, such as interactive web sites, to improve and facilitate customer access.
4. A customer focus process through which customers of competitors and other potential customers are identified and targeted.
5. An account team overview process (ATOP), which consists of quarterly cross-functional reviews of each customer account in these areas of operation.
6. The addition of quality system requirements, such as QS-9000, ISO 9000, and customer quality award criteria.
7. Plant visits by our engineering and production people to customer assembly facilities to train their people in proper installation techniques and solicit their input regarding our products and services.

These and many other listening and learning approaches are employed to help clarify customer requirements and expectations, and to build understanding and loyalty. These approaches and each customer's contact requirements are deployed through staff meetings, job descriptions, work instructions, and performance reviews for customer contact personnel. We also train new people, including extensive travel time with experienced customer contact people to help them become familiar with each customer's people, policies, procedures, and expectations.

Responsibility for evaluating and improving our listening and learning approaches lies primarily with DQLP Team. This cross-functional team meets monthly to evaluate our approaches and to implement suggestions for improvement. This team also reviews the NCSS results, DQLP feedback reports, benchmarks, business gain and loss data, and customer complaints.

Customer complaint process

Our complaint management process is built upon an electronic Corrective Action Report (CAR) system. This system links all facilities, disciplines, and operating units through a Lotus Notes-based program to ensure fast and effective communication, resolution, and follow-up of customer complaints. All customer complaints are entered into the system by their recipient and communicated throughout the division by way of the electronic CAR. Once a complaint is logged, it is assigned a champion from the appropriate discipline and facility, as well as a due date for its resolution that is communicated to all pertinent parties.

Whenever possible, the person receiving and entering the complaint serves as its champion and resolves the problem immediately. The champion must demonstrate the implementation for both short-term and long-term corrective and preventative actions. This is a closed-loop system, meaning the person who entered the complaint is the only one who can close it out.

If certain requirements are not met, a built-in escalation mechanism notifies all
**Customer complaint process, continued**

The system also consolidates complaints and resolution time within a single database that can be viewed throughout the group at any time. This data is formally reviewed by customer teams quarterly to ensure that all complaints have been properly addressed. All CARs, whether open or closed, are further reviewed at each monthly Quality Council meeting to identify and address the development of any adverse trends within the group.

The CAR process is evaluated and improved by way of a management responsibility procedure, which requires that management review the CAR system for its effectiveness. The improvement process models our customer-preferred problem-solving methods, which place heavy emphasis on root-cause analysis.

**National Customer Satisfaction Survey**

A primary source of information regarding customer satisfaction is our NCSS. Existing and potential customers rank us on a variety of attributes and the importance that those attributes hold for them. Another important purpose of this survey is to obtain candid, unfiltered comments from customers about their expectations for us and about issues they consider indicators of their satisfaction or dissatisfaction. This information provides us with vital insight for use in business development and product planning.

**Brand loyalty data**

We use a second customer survey to measure satisfaction and dissatisfaction, the Biennial Brand Survey. This survey focuses on brand loyalty and satisfaction levels for those individuals responsible for specifying which driveshaft is used in a particular vehicle. This survey is segregated by market and provides additional insight into customer satisfaction with us and our competitors.

**Customer rating**

Another important source of customer satisfaction data comes from customer ratings. These measures consist of a variety of supplier performance ratings and award criteria that most of our customers use to rate our performance. Typical ratings consist of various quality and delivery indices, as well as cost savings and other activities of specific importance to that customer. In addition to these measures of customer satisfaction, we also employ a variety of secondary tools that provide an early warning of potential customer dissatisfaction. These include our delivery performance, customer complaints, warranty data, parts per million, and transportation costs, among others.

**Visiting customer plants**

Spicer Driveshaft people from many disciplines visit customer facilities to conduct assembly line audits to ensure proper installation of our products in their vehicles. This enhances our ability to assess any problems customers might be having and provides actionable feedback to identify potential improvements.

**Customer visits to our facilities**

Visits to our facilities provide opportunities for customers’ frontline people to share ideas on product design, handling, packaging, and shipping requirements.
Process review

We keep our approaches to satisfaction current throughout the evaluation and improvement cycle of our customer focus process. Each year the DQLP Team reviews the NCSS results, DQLP reports, and benchmarks relating to process approach and deployment. After reviewing this data, the team develops recommendations for improvement in customer satisfaction and presents them to the Quality Council, which reviews these findings as well as customer satisfaction data, performance trends, customer contact, attribute measurement, customer feedback, and MST and CPT feedback.

Risk assessments

Financial risk assessment focuses largely on “make versus buy” decisions for components, investments in new products, or processes in competitive pricing issues. Key factors in this assessment include the cost of new programs, product development requirements, sales growth, corporate objectives, profitability, and availability of capital.

Societal risk assessment factors are viewed in terms of environmental impact, product recyclability, product liability, and safety. Dana’s legal and environmental services are key sources of input.

Human resource needs

Human resource needs and capabilities are addressed by the HR managers group. This process is facilitated by an activities database, which aggregates all key HR data, including education developments, well-being, and satisfaction data. Another important source of data is our annual quality culture survey, which collects information from our people on a variety of issues. As strategic plans become more detailed, human resource capabilities are assessed in terms of skill levels, available personnel, recruitment, technological capability, and education.

Supplier evaluation

Finally, we evaluate suppliers in several key areas of performance through our division purchasing and engineering groups. Where appropriate, suppliers are also involved in our planning, working with us to develop new products or processes and to explore opportunities for cost reduction. The purchasing group also maintains a Risk Assessment Matrix for all key suppliers, which evaluates and measures the capabilities and performance of several key categories.

Conclusion

We conclude our discussion of Strategic Planning, and Customer and Market Focus, with one very important statement:

The futility of strategic planning without a solid customer focus is surpassed only by the futility of a solid customer focus without a comprehensive plan for implementation.

While there are obviously linkages among virtually all Baldrige categories, we believe a living, active link between these two categories is the absolute key for long-term success of any commercial concern.
Information and Analysis

Dave Frank, Group Controller—Spicer Driveshaft has five assembly and five manufacturing facilities in the United States. In addition, we have an Information Technology Center and an Engineering and Design Center.

We coordinate the company's information needs with an Information and Analysis Team, which has three facility managers, two information technology members, four financial members, one human resource member, one assembly member, and one sales member. We attempt to balance the needs of eight stakeholders that we have identified as crucial to our business: corporate, division, customer, employees, stockholders, suppliers, community, and public.

A measurement system has been designed that supports the eight stakeholders as equally as possible. The system is championed by the general manager and is an integral part of the TQM process. To select our measures, we utilize a variety of internal and external inputs, shown in Figure 1. The DQLP Teams, Quality Council, and specific process owners are responsible for defining the measurements we will use, based on the inputs they receive.

Figure 1. TQM Process.

Quality Council

The Quality Council is comprised of those people who report directly to our vice president and general manager. This includes plant and other discipline managers, such as finance, sales, assembly, manufacturing, engineering, human resources, quality, and information technology. All of these people are leaders or members of at least one DQLP Team.

Measurement summit

The measures are reviewed quarterly in a measurement summit conducted by the Information and Analysis Team. We conduct a survey of all of our locations annually to find out what measures they are using. This is then used in one of our summits as a way of determining the effectiveness of the performance measurement system, and the method to review and improve the system. This analysis is done to find if there are new, innovative measures that a location may have installed that
Measurement summit, continued

should be shared with others, or to discover if we have developed any inconsistencies in what is being measured. We do this to avoid data overload, and to make sure all locations are focused on the right areas. I will elaborate on this shortly.

After the measurement summit, we take our recommendations to the Quality Council for approval. When approval is given, any changes or new measures are then deployed to the business units affected. If there is a significant business change, or a major stakeholder change, new measures may be implemented based on any of the inputs in an on-going process.

TQM Control Plan

The output of the selection process is the TQM control plan (Figure 2). We use the TQMs to focus on the most critical measures to be reviewed by the Quality Council. This document identifies the TQMs and their linkage to KBDs as well as elements from our mission statement. Performance targets are set and key measures are monitored at specified times by the Quality Council. It is a living document that changes periodically as a result of measurement summits and the inputs noted earlier.

The TQMs are balanced among the five KBDs: customer satisfaction, quality, deploying the Dana Style, financial growth, and business growth. These are the measures at the top level of our group. Not all of them can be used at all locations.

Performance measurement system

We illustrate our measurement system linkage with a pyramid (see Figure 3 on the next page). The shape represents the fact that we have many measures that support our vision and mission. Each tier of the pyramid supports the next. At the top are the vision and mission statements that drive our measurements. Our vision and mission, along with the philosophies and policies of Dana, form the basis of our business. The statements are developed by our Quality Council and are reviewed annually. Quality Council members deploy them through the facility manager (a member of the team developing the statements) by visuals used in each facility and by visits to the facilities.
Performance measurement system, continued

The values outlined in our vision and mission statements are supported with the five KBDs. Measurements are in place to support the KBDs, which, in turn, support our vision and mission. This section of the pyramid focuses on measures that can be deployed at most, if not all, locations.

We also have indicators called TQMs. They are measures that generally do not warrant full Quality Council review but are important for certain individuals or groups within the Quality Council. For example, the HR manager may use a TQM on employee turnover, and each facility may be directed to track this measure. It is not a TQM, but it is a measure that is consistently monitored across our group.

Local site indicators support TQMs and are measures unique to certain facilities and used to support certain KBDs. For example, the number of driveshafts assembled per hour is a good measure for assembly facilities, but not for component manufacturing locations.

The base level of the pyramid is specific department measures within a facility that are unique to that department. One key requirement is that all measures must link to a KBD, which, in turn, links to Dana Spicer Driveshaft’s vision and mission.

Review and analysis

To the right of the pyramid illustrated in Figure 3 are the review and analysis responsibility. This illustrates the linkage among the various levels in the pyramid. The key linkages are the plant managers, who participate in our Quality, Manufacturing, or Assembly councils. They also participate in the management of the individual facilities. They are the key link to ensure that local measures are integrated into the entire measurement system through their support of the KBDs.

Mentoring process

Another way that we make sure our performance measurement system is deployed and integrated throughout all sites is through our mentoring process. Within the last year, representatives from the Information and Analysis Team have either personally visited or held a phone conference with all sites to detail our approach to information and analysis. The sessions were with the plant staff and allowed for questions, discussion, and clarification of items. They were extremely valuable, not just for the facilities, but for the Information and Analysis Team to learn more about the various locations throughout our group because we made it a rule that the visit had to be by people not working at that facility on a daily basis.
Comparative data

The selection of comparative data is driven by DQLP teams or individual process owners. The measurement summit, conducted by the Information and Analysis Team, helps coordinate this data. We classify our comparative data into four categories: (1) benchmarks (regardless of industry), (2) industry average (to evaluate where we are), (3) competitive comparisons (to look specifically at competitors in our product line), and (4) internal Dana (Dana Best, Dana Average, or Dana Gold).

To facilitate the use of comparative data, we formed a benchmarking team that determines the benchmarking process and serves as advisors to anyone looking at a benchmarking activity. Some of our inputs to determine who and where to look for comparative data and conduct benchmarking activities include Industry Week Magazine’s Ten Best Plants, the Quest for Excellence Conference, Malcolm Baldrige Regional Conferences, Customer Input, and our Dana Best Processes Sharing.

Performance review and planning

Our Quality and Manufacturing Councils meet monthly to review the outputs of our performance measurement system. The review includes totals as well as individual units. Improvement options are presented by council members or designates as they relate to performance targets.

In addition, our SBC meets on an ongoing basis, to review issues such as new business, engineering issues, capacity items, and other items relative to the entire group rather than individual facilities. The SBC also reviews the SBP and action items associated with it on a quarterly basis.

A major strength of Dana is that we promote from within. Most Quality Council members have broad experience, having moved from location to location, from different products and different divisions. This has given the group a strong understanding of various metrics and methods available to enhance performance.

A way to illustrate our analysis process is through the use of the performance review and planning wheel, shown in Figure 4 on the next page. This wheel is a continuous loop that links all indicators together in support of our KBDs. At the top of the wheel is the review of the TQMs by the Quality and Manufacturing Councils. Members of the councils review these with their staffs. Any negative trends have action plans and metrics developed to improve and track the progress. Much of the data is consolidated at the division level for reporting to the Quality and Manufacturing Councils.

Linkage of analysis

The linkage of our analysis throughout the organization can best be illustrated by the use of the pyramid shown earlier, in Figure 3. The key to our system effectiveness is the selection of what we measure at each level. As long as we ensure that all measures are aligned in support of our vision, mission, and KBDs, we are headed in the right direction. We then make sure that each measure has an owner who becomes expert in that measure. Many of our measures are aggregates from plant- or department-level data. This allows us to break apart these measures into smaller pieces to analyze the data more completely.
Performance review and planning, continued

Process Management

Mike Gerber, Director of Information Technology—A product or service starts with an innovative idea that serves a customer or market need, and is driven by our commitment to the pursuit of excellence. Initially, ideas are channeled to specific groups within the organization. The Advanced Engineering Group captures product innovations and investigates their feasibility to the point of production readiness. Process innovations are gathered through the Assembly Task Force and specific groups within our manufacturing organization. These become inputs into the first phase of a new product development process, which we call Advanced Product Quality Planning (APQP).

APQP is a twenty-three-step process. It ensures that all of the products and services we design, along with the related production and delivery processes, are directly aligned with the needs of our customers and their markets. The process covers four distinct phases of product introduction: (1) design feasibility, (2) validation testing, (3) production trial run, and (4) production and delivery.

Design feasibility

Each proposal is subject to a feasibility study and management approval to ensure alignment with strategic objectives. The cross-functional APQP team establishes guidelines for design and development, validation, reliability, cost, and timing, which are indicated by program and customer requirements.
Design feasibility, continued

The product design feasibility phase entails developing products that are engineered for manufacture. We do this by involving suppliers, manufacturing, and assembly people as early in the process as possible. We try to exceed our customers' expectations, especially with new innovations. However, it is easy to get lost in the excitement of new technologies.

The APQP process makes certain that we never lose sight of the customers' needs as we push the envelope of new ideas. A scorecard is used with red, yellow, and green alerts to visually monitor the process. Cycle time and productivity are managed by tracking APQP progress against projected timelines. Transfer of learning occurs through APQP team meetings and lessons-learned sessions. All major program activity is shared using a web-based system.

Customers typically participate as active members of APQP teams. Additionally, we receive continuous inputs through a series of cross-functional CPTs that continuously capture customer and market requirements from their customer counterparts. This ensures a rapid response to newly discovered market trends.

Validation testing

The second phase, validation testing, is designed to optimize component strength before production. We use 3-D computer modeling and finite element analysis to shorten design time and optimize a part long before it is produced. When approved by the cross-functional APQP team, we make “rapid prototypes,” using “laminated object modeling” and “fused deposition modeling” to make plastic or paper prototypes. These help us to quickly develop product models that can be handled by customers to check the form and fit. Prototype models are also used by the manufacturing people to develop production tooling and fixtures.

We then make a sample part for testing. We perform physical testing in our own laboratory to verify durability. We conduct noise, vibration, and harshness testing to evaluate the integrity of the design. This complements the eventual customer testing of our product in his or her own facilities.

Production and delivery processes

Production and delivery processes are concurrently developed with the design phase. Outputs include Process Failure Mode and Effect Analysis (P-FMEA), process flowcharts, work instructions, and control plans. Delivery requirements and standards, including packaging, labeling, and shipping instructions, are cascaded to the shop floor and various departments.

Production trial run

Design verification leads to the third phase—pre-production, or the production trial run. We check that our newly developed production processes meet our standards, customer expectations, and the needed volumes. We validate the new part and the process capability during production trial runs. Customers participate in these trial runs at our facilities.

At the end of the first three phases, the APQP team evaluates the project and makes a final team feasibility commitment. By addressing all the potential problems
Production trial run, continued

in the first three phases, we ensure that the fourth, the production phase, will have a successful launch. We attempt to address all concerns at the earliest possible stages of new product introduction to minimize cost, maximize speed to market, and ensure product quality.

Measurement system reliability

Measurement system reliability is ensured through recognized international standards. Statistical process controls or other approved methods of process control are used in facilities to monitor quality characteristics. Operators and cell technicians are empowered to shut down an operation if necessary. In addition, our Enterprise Resource Planning Information System (MS8) is deployed to all locations and addresses scheduling and inventory management. The overall QS-9000 quality system is evaluated during scheduled internal audits and during semi-annual third-party assessments. All of our quality documentation is available on a database called QSI. Each facility inputs their information, and everyone has access to this division-wide database that contains all Spicer Driveshaft policies, procedures, and work instructions. All corrective action stemming from customer or internal sources is located there and monitored— and, if necessary, escalated for management review.

Magnetic pulse welding

Some new technology examples that we are excited about include a unique process to weld dissimilar metals without heat, by using our patented magnetic pulse technology. This helps reduce vehicle weight and produces a straighter part. Another plus is that the process is environmentally friendly. There is no smoke, fumes, or gas tank— not what you would expect in a welding process.

Net forming

This is a good example of asking the right questions, so we can spend our time improving the right things. A grinding process normally creates waste that needs to be disposed of. Instead of trying to find new ways to dispose of this waste, we changed the process to “net forming.” It eliminates waste and reduces machining.

Safety

Safety is always an uppermost concern. We developed an innovative tubing process that enable our driveshafts to collapse, in a linear way, without losing functionality. This ensures that our driveshafts will perform during a collision.

Processing and supplier advancements

New processing and supply technologies also address cost control. Through Value Analysis/Value Engineering (VA/VE) training and support programs, we work closely with our plants and suppliers to make cost and productivity improvements. These help us keep a focus on exceeding stakeholder expectations.

We achieve some process improvements through “Better Way Blitzes,” where teams are active in process simplification, waste reduction, set-up reductions, cell layouts, and exploration of alternate technologies. The value of these projects is tracked in a manufacturing cost improvement database that is available to all Spicer Driveshaft people, which helps with sharing ideas throughout the division.
Additional improvements

Additional ideas for improvement are shared at Manufacturing and Assembly Councils, Dana’s Best Processes Day, technology roundtables, corporate Quality Councils, and various methods of communication with key members. We also developed a formal benchmarking process, and this information is captured in an electronic benchmarking bulletin board that is accessible to everyone.

Internal and external customer input

Internal and external customer input is continuously solicited from all customer disciplines in the form of verbal requests, formal corrective action requests, and performance ratings. Our customer performance rating feedback is tracked locally, and reported monthly on a division basis. Each quarter, the division’s performance is reviewed in a Corporate Continuous Improvement Meeting, where the division is held accountable for customers’ perceptions of our collective performance. These meetings are driven directly from customer information, and result in action plans that are focused on customer needs.

The process to determine customer requirements is based on their feedback and is supported by KBDs, strategic objectives, government regulations, and the shared beliefs and values expressed in the Dana Style. These beliefs and values are ingrained in our culture. They are published on our Spicer Driveshaft intranet, and are also available to the public on the Dana web site.

We determine key customer requirements and evaluate the effectiveness of our business process through a system of feedback from both our internal and external customers. Feedback comes to us in the form of inputs from CPTs, MSTs, APQP activity, and the annual third-party NCSS.

Departments and cross-functional teams analyze external customer data to better understand their expectations. From these expectations, requirements are developed and measures are assigned to support Driveshaft’s TQM indicators. This series of steps helps us focus on the drivers that most affect our customer relationships. Process owners can also use a web-based system, called 2WAY, to survey internal process customers. 2WAY allows surveys to be created quickly and results to be organized for review immediately, and on-line.

Electronic technology improving support network

Technology is improving our support network with advances in computer-aided engineering and information technology. As previously mentioned, we use computers to test new designs without physically creating a part, a huge improvement in the speed and agility of key engineering support processes.

Our paper-based processes are being eliminated and redesigned using advanced electronic workflow technology from industry leaders Lotus and Tri-Log. Speed and flexibility are essential in the internet age.

Process measurements

We employ in-process and end-of-process measures to manage support service performance, and to ensure that requirements are met or exceeded in our day-to-day activities. Departments and cross-functional teams use process mapping and
Process measurements, continued

benchmarking as aids for improvement.

We review feedback from the DQLP and from the Baldrige Quality Award process to help us evaluate and improve division and facility progress. These are also accessible at electronic bulletin boards. Everyone uses this feedback, together with employee ideas, team meetings, and open-door policies, to continuously evaluate and improve our support system network.

Our human resource database is shared electronically throughout the division to encourage idea exchanges and highlight new or changing procedures. Accounting is coordinated at the corporate level, and several improvement cycles have increased both accuracy and efficiency.

Supplier relations

Ultimately, the success of any company is strongly influenced by its relationships with suppliers. Dana’s key purchased products are productive materials such as steel, forgings, castings, and aluminum. We also use bearings, seals, rubber cushions, and tubing. Our production services include heat-treat and grinding.

Driveshaft purchasing uses an approved supplier list that is placed on its integrated information system for instant access at every facility. This system helps us track supplier performance at the local and division level. Internal procedures outline division responsibilities, such as negotiating supply contracts, pricing, and additions or deletions to our supplier list. Decentralized purchasing philosophy encourages direct personal contact with a facility’s suppliers. This has led to improved just-in-time deliveries, reduced inventory, and lowered cost.

The Dana Corporation Supplier Quality Manual, which is housed on the Dana web site provides quality and performance requirements to our suppliers. Manuals are also distributed to suppliers by our purchasing group, and are an extension of the purchase order. Supplier capabilities, which are addressed in our APQP process, entail future short-term and long-term requirements and are evaluated against supplier capabilities.

The supplier development coordinator provides training to suppliers on our rating system and its requirements. Business assistance and incentives are provided to suppliers who achieve preferred supplier status. This benefits suppliers with long-term contracts, volume buying, and preference for new or additional business.

Another approach to supplier assistance is the availability of VA/VE training to create cost savings proposals, and engineering support for design and rapid prototyping. Suppliers are eligible to participate in the Dana University Supplier Development Program. We did, incidentally, introduce three of our suppliers to the Malcolm Baldrige Criteria.

Division purchasing performs quarterly reviews of supplier performance to our plants and to our division as a whole. Suppliers receive this feedback and are expected to initiate corrective action as the performance indicates. This helps identify suppliers that have unacceptable trends, and which suppliers need additional assistance.
Supplier relations, continued

Third-party supplier audits associated with ISO and QS-9000 registration reduce or eliminate the need for our suppliers to perform incoming inspection and supplier site audits, thus reducing cost. Material certification requirements, statistical process control, and supplier self-audit surveys reduce incoming inspection at our facilities. Various just-in-time delivery methods throughout the division help keep inventory to a minimum.

Core purchasing group

Purchasing managers at each facility support a core division purchasing group. This cross-functional team is responsible for the continuous improvement of our supplier processes by reviewing and validating our supplier system. They analyze overall supplier performance, current business needs, and future direction. Purchasing managers use feedback reports, industry publications, and input from supplier conferences to conduct process benchmarking. Based on this analysis, the group identifies opportunities for improvement, and submits suggestions to the Quality Council or the supplier development coordinator, who assigns action plans for change, standardization, and deployment throughout the division.

We hold an annual key supplier conference to communicate changes, including updated supplier requirements, performance reviews, technology changes, and future business directions. We share customer concerns, plans, and feedback.

Finally, the purchasing department uses an annual supplier survey to solicit additional input for improving our procurement process.

Conclusion

We have carefully crafted our processes with nothing less than total quality as our goal. These processes are continuously evaluated and improved to meet and exceed expectations from concept to delivery and beyond. We are proud of our past accomplishments, but our processes do not manage the past—they help guide us toward the future.

Human Resource Focus

Frank Lechlak, Director of Human Resources, and Denise Wright, Human Resource Manager—In 1934, Charles Dana said, “No one knows better than I the value of advice direct from the workman.” We take that to heart. Dana employs approximately 70,000 people worldwide. In the spirit of cooperation we encourage cross-functional teams, task forces, process improvement teams, and Blitzes. We are flexible, because of our broad job descriptions, cross-training, and job rotation.

Our processes allow a quick changeover when necessary to satisfy customers. We collaborate with suppliers in other Dana divisions. We encourage innovation and customer focus by encouraging people to earn patent awards, and empowering them to implement their own ideas. Our division averages 2.9 ideas per month per person, with a 74% implementation rate. People are recognized and rewarded for their ideas in various ways, and it is a key measure in our HR database. The database tracks cost savings, which helps us measure the effectiveness of the ideas.
Decentralization

We embrace a philosophy of decentralization, which means that every Strategic Business Unit, division, and plant operates in the way they see fit, as long as it is in line with the company objectives, the Dana Style, Philosophy and Policies, and our Standards of Conduct. It is a challenge for us to do business in this environment of decentralization and yet align our processes across the organization. We meet this challenge by using the Baldrige Criteria for Performance Excellence to align processes and stay true to our decentralization philosophy.

Understanding and nurturing our culture

Our Quality Culture Survey (QCS) process helps us to better understand what Driveshaft people are thinking. It is a tool that gives us an opportunity to evaluate organizational strengths, and spot opportunities for improvement. This survey includes a standard set of fifty-six objective questions covering a range of sixteen topics, for cross-division comparison. The survey also features a comment section, where employees have an opportunity to make anonymous subjective comments or suggestions. We benchmark our results with other Dana divisions, participating manufacturers, and the best-in-class companies.

After the results are tabulated the team analyzes and clarifies the survey data. We also compare results to those from prior years, and benchmark against internal and external sources to clarify the meaning of subjective responses. Small group meetings are held to identify specific areas for improvement. Then short-term and long-term action plans are developed.

Survey improvement process

To make sure we pay attention to maintaining and improving a good culture, we developed a people survey improvement process to ensure that lower-scoring items at each location were being evaluated and addressed, which adds even more credibility to our QCS process. The people survey improvement process is outlined in Figure 5. It shows how the human resource team reviews survey objectives.
CASE STUDY

Dana Spicer Driveshaft—2000 Malcolm Baldrige National Quality Award Winner

Seeing some linkages

We statistically compared the 1999 and 2000 results on the question of overall workplace satisfaction. By analyzing the linkages between questions on what category drove improvement, we learned that workplace satisfaction was linked to fair treatment and job security. We also learned that education drove some elements, including opportunity for growth and recognition. It also drove empowerment, and that was strongly linked to involvement. Quality had a highly significant and strong correlation to communications. The linkages are 95% statistically accurate.

Empowerment, productivity, and job security

In the area of empowerment, we are above both the industry average and Dana as a whole, but below best-in-class: 72% of our people feel they are empowered to do what is necessary to satisfy their customers. In the area of productivity and job security we are best-in-class, with a 92% score.

High performance

We reinforce high performance by annual reviews, asking for two ideas per person per month, supporting skill enhancement through the Dana Certified supervisor program (taught at Dana University), communicating that Dana people are responsible for their own careers, and promoting from within.

Recognition

We recognize and reward success, although we need to make some improvements with recognition. Our QCS showed flat results for the past four years on recognition. Even though we’re above the manufacturing norm, we are not satisfied. The Baldrige feedback report identified this as an improvement opportunity.

Although we always recognized our people in a number of ways, the people were not always aware when this was happening. This analysis led us to deploy a division-wide road map to help formalize our recognition processes. Some of the events we formally announce are team recognition activities, community involvement, promotions, service anniversaries, productivity, new ideas, and total quality indicators. This recognition takes place primarily at monthly facility and plant-wide meetings. Our approaches can vary from a lunch, gift certificate, or an article in a local newspaper.

Communication

We also instituted a communication road map because it was an opportunity for improvement, and it has significant linkage to quality. This standardized the process by laying out quarterly and monthly topics to be covered in plant meetings. All facilities review financial performance, customer outlooks, productivity, safety, housekeeping, and recognition on a monthly basis. Each quarter we cover our planning cycle, through Hellweek and mid-year reporting, and QCS results.

Focus videos, produced by our corporate communications department, give interesting information about Dana locations around the world. We also go over DQLP and Malcolm Baldrige feedback, and talk about opportunities for improvement. All of these meetings are tracked in our human resource database.
Education and training

Dana Style indicates that our people receive forty hours of education a year. We use Dana University to develop some of the formal forms of education and to certify our supervisors. Dana Style suggests that we cross-fertilize experiences by cross-training in regions and business units. We encourage people to learn about different product groups, markets, and regions of the world.

To give consistent education and training to new employees, we use an orientation checklist at all our facilities. This checklist helps to ensure that everyone receives training about what to expect from Dana and what we expect of them as valuable new members of the Dana family. Among the topics covered are getting to know Dana, code of conduct, career development, how to be safe and healthy, various forms of communication, innovation, quality, and benefits and policies.

An example of training that drives our SBP is the “Better Way Blitz.” A Blitz is a team of people that works on a specific improvement project to eliminate waste in any form during a short period of time (i.e., eight to forty hours). We have ten facilitators throughout the division that have been specifically trained to coordinate blitzes, and to facilitate process management improvements. For example, a Line 2 Blitz was held at our Toledo Driveshaft center last fall. During this four-day Blitz they reduced operator daily travel in the plant from eight to four miles, and reduced the number of people needed for the process from seven to five. These two people were then reassigned to other jobs. People feel comfortable making improvements that might eliminate a position because they are told at the beginning of each session that any people affected by job elimination will be reassigned to another job. Change becomes a way of life, and is viewed as non-threatening. Work-in-process (WIP) was reduced from ninety to forty-five pieces, and machine setup was reduced from twenty minutes to less than five minutes. Overall, it increased productivity by 10% in that cell. The goal for each facility is a minimum of one Blitz per month, and all Blitzes are tracked in the human resource database.

The results of our training are measured in two ways: (1) by hours of training per person, and (2) by cost saving. These are tracked in our database, which allows us to see the effectiveness of our training and operational performance. Training hours have dramatically increased since 1997. In 2000, we delivered 42.5 hours per person in training and education.

Dana Style points out that our people are our most important asset, that they find a better way, that we do annual performance appraisals, and that Dana people set their own goals and take ownership and responsibility for their own careers. Dana gives trust, the freedom to fail, and support in the growth of its people. For example, a couple of years ago an opportunity for improvement from the Baldrige feedback report was that there was “no clear direction on upward mobility.” So we developed a Career Pathing Program in six specific disciplines. It is posted at each facility and on our intranet. Each employee now has a career path book so that each manager can mentor their employees and ensure that paths for their careers address their needs.
Education and training, continued

To assist our people in meeting the minimum requirements in career path guidelines, we raised our tuition reimbursement from 75% to 100% of tuition and books. We also encourage our people to continue their formal education. We have Dana University, which consists of three schools: customer and industrial, technical, and business management.

Our management school offers six courses that, when completed, give people a certified supervisor designation. We also partner with universities to offer master's degree programs in business, engineering, and manufacturing management and an associate's degree in manufacturing technology. Our technical school offers education in lean manufacturing principles, quality certification reviews, and Six Sigma Black Belt training. Our customer and industrial school provides product training to both customers and employees.

We also promote professional development through certification programs and skills training. We offer quality programs in the form of QS standards, quality performance certifications, and Baldrige Criteria. People can take personal improvement classes that vary from Dale Carnegie courses to leadership training. Our engineers are further developed by participating in and presenting at a one-month course titled “Spicer University,” where new Driveshaft engineers from around the world learn our processes, procedures, and products. This is essential for the deployment of consistent global methods to design, test, and deliver our products.

Is it effective? Yes. In 2000 we promoted 152 people. Our QCS shows our score for opportunity, growth, and development to be at 71%, up 4% from 1998 and better than the Dana manufacturing norm and manufacturing best-in-class. Dana people truly feel our promote-from-within policy works for them.

Work environment

We encourage all Dana people to be shareholders, to be healthy and safe, and to be proud of being a Dana person. The leadership listens and leads by example. To ensure uniformity we developed a human resource database with clear definitions, so that each facility could enter data and information on a consistent basis.

We measure most HR items that are important to Dana and our people, including employment, turnover, promotion, leave of absence, safety, attendance, involvement, workers' compensation, and meeting education and training hours.

Employment—We measure active, full-time equivalent, leaves of absence, and layoffs. This helps us with manpower planning at the facility and division level.

Turnover—We measure resignations, discharges, retirees, and deaths. This gives us the data we need to plan and recruit in the months to come.

Promotion—Promotions are tracked from within and outside the division. This gives us the measurement data we need to track our career pathing, and to check that our promotion-from-within policy is working.

Leaves of absence—We track days missed due to medical, personal, workers' compensation, jury duty, FMLA, and military leave. The software program automatically compiles the days and full-time equivalent data. The information is used for manpower planning.

Safety and workers' compensation—We track OSHA recordable injuries and total
hours worked. Our Safety and Ergonomics Teams use this information for proactive improvement plans at each facility.

Union facilities—We track number of grievances filed, open grievances, and grievances resolved. This gives us information on labor issues.

Involvement—We track total ideas, ideas per person, number implemented, rate of implementation, and percentage of employees participating in the idea system. We also track the number of teams at each facility. This gives us a good indication of employee involvement and empowerment. Meeting hours are tracked to see Dana Blitzes, teams, and plant staff meetings. This is to ensure that communication is taking place, at least on a monthly basis.

Education and training—Hours are tracked, including formal education, skills and quality training, personal development, safety, and organizational training. Totals are aggregated to give us the number of hours of training per person.

All of this data is entered into the database on a monthly basis. The data is compared with previous year-to-date totals and data from other plants within the division, and key data is compared with that of other Dana divisions and industry benchmarks. If negative trends are determined, action plans are put into place to correct them. The Lotus Notes database is reviewed on an annual basis for its effectiveness, allowing us to continually improve our performance measurements.

The results from the database recently showed some inconsistency in the deployment of health and safety processes at each location. Therefore, we formed a Safety Team and an Ergonomics Team at each location. These teams work to ensure that safety processes are reviewed in a timely and proactive manner. They do this by performing facility audits and reviewing air-quality and noise levels, OSHA injury reports, QCS results, and lost-time injury reports, along with other items at a facility level. The results of these team efforts are that OSHA recordable injury rates for the total division declined to below industry average. The proactive Safety Team and Ergonomics Team process is working for us.

Additional ways we measure employee well-being are through attendance and turnover. We are currently at 98.3% attendance. Turnover is better than best-in-class, at less than 1%.

These are some of the ways in which we create a positive work environment in partnership with our people. People have the opportunity to grow and flourish at Dana, which encourages loyalty to our company.

Journey to Performance Excellence

Vince Morgillo, Director of Quality—Our pursuit of excellence began around 1990, when the Dana University team started the Excellence in Manufacturing Program. We started teaching our people the tools of problem solving, problem analysis, and root-cause analysis. These processes helped us understand why things happen, how to improve the system, how to eliminate waste, how to better utilize our workspace, and how to better utilize our time.
Six Sigma

In 1992, Dana began to implement "the Six Sigma Quality Challenge." Our Six Sigma Quality Challenge was based on the newly emerging Malcolm Baldrige National Quality Award. The objective was to change Dana into a Six Sigma company with fewer than 3.4 errors per million opportunities.

The Six Sigma Quality Challenge was not well received. It was something that took time. There was a lot of report writing. And just a few years earlier our president, Ren MacPherson, made a significant change in Dana when he eliminated a thirty-inch-high pile of procedures in favor of the four policy sheets we now use. The last thing we wanted was another document-driven burden.

Dana Quality Leadership Process

Dana soon recognized that Six Sigma had several different meanings for people, so our program was renamed the Dana Quality Leadership Award. A few years later we changed the name to the Dana Quality Leadership Process (DQLP). The key difference was moving from an emphasis on winning an award (which became acknowledgment of a well-written application) to a focus on designing, implementing, and improving processes (which actually deals with sustainable business results).

By the mid 1990s the heavy truck industry realized it did not have a robust quality systems approach. It started an initiative to develop that as part of the Automotive Industry Action Group (AIAG). This initiative later became QS-9000. (QS-9000 is basically ISO 9000 with additional requirements specific to Ford, General Motors, and Chrysler, as well as the heavy truck industry. ISO 9000 is document driven and is third-party audited and verified.) By 1994, QS-9000 became a reality at Dana and Spicer Driveshaft, primarily in our light vehicular market. Registration was required by July 1997.

In 1994, our president, Joe Magliochetti, said, "Through Dana's Quality Leadership Award Process, we will set the pace into the twenty-first century. Dana Corporation will be a worldwide benchmark for all process management and quality improvement, through education and the participation and involvement of all of our people." Further emphasizing this commitment in 2000, when he became CEO, Mr. Magliochetti stated, "The DQLP will become the common business process within the company. All the SBU leaders have committed to using the DQLP as the model for their business processes." His commitment makes the DQLP and the Baldrige process work.

With our customers requiring more paper-based documentation, and with our DQLP initiatives, we were concerned with the systems supporting each other. We tried to blend the document base of ISO 9000 with the Baldrige categories, using the structure provided in ISO 9000's procedures and document control. We launched those procedures and utilized them to move our approaches through the division to get uniformity across our plants. This was quite a challenge for Spicer Driveshaft, and we did it successfully.

In 1998, based on the continuous scoring improvements in our DQLP, our corporate director of quality suggested that we should apply for the Malcolm Baldrige National Quality Award. We did not believe we were ready for it. Our...
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director's point was quite clear: "The beauty of the Baldrige is the feedback report." We pursued the Baldrige Award because we believed that an additional third-party evaluation of our business was a great opportunity. We previously used only Dana eyes to evaluate ourselves, and we found that that was limiting our progress. The Baldrige process gave us a way to measure ourselves in all aspects of the business, and it gave us an application that we could use as a training tool.

The secret to the success of the DQLP and the Baldrige process is leadership. DQLP gave us a way to evaluate the way we do business, using people outside our division. Examiners, coming from an after-market group or a financial group, are free from the paradigms that people inside the system have. The outside people do not know how we do things or why, so their opinion is very valuable to us.

QS-9000 caused us to define our processes in every aspect of our business, to ensure customer satisfaction. There are twenty categories in QS-9000, and we had to address all of them. These are primarily lower-level documents that deal basically with the tasks that are necessary to ensure compliance with customer requirements. We were required to have semi-annual surveillance audits performed, using external registrars. So, in addition to getting second-party feedback from our Dana examiners, we have another group of professionals providing us with their opinions of opportunities for improvement.

One of the system improvements resulting from QS-9000 was that it forced us into a very structured corrective action process. This process is applied to the results of the surveillance, as well as internal audits. If these corrective actions are not answered in a timely fashion they are electronically escalated to higher leadership levels. The actions have to be verifiable to close-out the concerns. Effective use of this process has resulted in continuous improvement of our stakeholders' key expectations, both internal and external.

One of the key structural improvements resulting from the DQLP efforts was increased leadership involvement. Mike Rhodes, our global manufacturing quality director, put forth our first Category Team Matrix. Categories were to be championed by the division staff, who would be personally responsible for each part of the DQLP. This included our general manager. The first training was for the leadership team. It was vision driven. Even though we were doing very well in our markets, our vision was to sustain that share and increase the returns from it.

There were some key steps identified. Some involved the ongoing internal assessment process, which was vital to our continuous improvement. Dana auditors continually assessed our systems on an annual basis. They helped us identify where we were not following our own processes, where we made errors, and where we might have systemic opportunities for improvement.

One improvement opportunity was in our advanced quality planning process. We had not been yielding the results we wanted when launching a new product, and needed to figure out why. What were the challenges that kept us from meeting our profit expectations and our customers' expectations? That helped us focus on the
Dana Quality Leadership Process, continued

deployment process. It helped us identify issues based on facts, rather than the quality director's opinion. Soon the whole team was looking at data and becoming data driven to identify what was really important and how to improve the deployment of the processes we use.

There was a lot of extra work, of course. We started to take a look at how we were segmenting ourselves. We had more challenges. There was not a lot of linkage to effectively define processes. A rule of thumb comes back to leadership commitment: If we are committed to do it, then let's do it and let's add value. We have to make sure that we are focused on the improvements and the changes we are going to make, and that they are good for our business.

The additional tasks that we were involved with were more demanding, and I can tell you that our resources were very stretched. We asked for volunteers to help on teams, and that became very demanding on them. Many of the team members decided that they had too much on their plate—family commitments, work commitments, personal commitments—and all of us went in and out of the process for the next couple of years. Overall, we stayed with it and, as we made improvements, our people started to see the effect.

Our next challenge was employee involvement. How could we get our employees involved? We decided we could let them volunteer to be members of the category teams. We needed people that understood what actually happened in the plants. These people taught management what it is that they actually do. It started to become very obvious that leadership had a lot to learn. With leadership championing the category teams, people started to see communication increase.

Another opportunity for employee involvement was to become examiners in our company-wide DQLP initiative. They found benefit in going to see other divisions and other plants. Another motivation in taking these responsibilities was job opportunities. When people are more familiar with all aspects of the corporation and its business, they increase their opportunities for new responsibilities and new positions. This was and continues to be a great motivator.

Dana Corporation has over 200 internal examiners trained in the Malcolm Baldrige process and Criteria who support our corporate DQLP. To me, that is an unbelievable commitment of our company and our people. We have a pool of knowledgeable and cross-functionally trained examiners throughout Dana Corporation that see the process work. The examiners are not just looking at transactional components. They are looking at these kinds of things: How do we get the voice of the customer heard? How do we turn the voice of the customer into something you can deliver and measure, such as customer dissatisfaction? How do we make sure that our processes can deliver that product and meet or exceed those expectations in a measurable way (such as a reduction in warranty concerns for the customer)? How do we know if the customer is really satisfied?
CASE STUDY

Dana Spicer Driveshaft—2000 Malcolm Baldrige National Quality Award Winner

Conclusion

The journey, of course, does not stop after winning the Malcolm Baldrige Award. The journey continues, and we need to utilize our experience to help the rest of the corporation and its organizational learning as we look forward to the future with great optimism. The more we share in the experience, the more we can buy into the process. And then we start to look at it as something more than work, more than some peripheral task. It becomes a personal satisfaction and a personal reward, as well as something even more important—something we can give back to all those employees we work with.

Author information

Joe Sober joined the Dana family in 1978 as an accounting supervisor for the Atlas Drop Forge operation. During the 1980s and 1990s, he served as production supervisor, plant controller, plant accountant, division controller, and plant manager in a variety of Dana facilities. In 1998 he assumed the role of vice president and general manager at Spicer Driveshaft, Inc.

Kellie Stevens began her career with the Dana family in 1994 as an applications engineer. She was a member of the General Motors customer platform team through 1977, the Dodge Mound Road business in 1998, and the Jeep customer platform team in 1999. In October 1999 she took the position of supervisor-engineering, Ford account managers.

Ron Schell began his career with the Dana family in 1966 as a process engineer at the Spicer Transmission Division. Since that time he has held positions in manufacturing, sales, and marketing. He joined Spicer Driveshaft in 1988 after serving as general sales manager at the Spicer Off-Highway Division.

Dave Frank began his career with the Dana family in 1981, serving as controller in several plants throughout the midwest and the south. In 1996, he became the division controller for the Spicer Off-Highway Axle Division, and his most recent assignment was division controller for the Spicer Off-Highway Components Division. He is a Dana Certified Supervisor and a C.P.A.

Mike Gerber joined the Dana family in 1990 and has held a variety of positions, including information systems auditor, systems analyst/programmer, and information systems manager, guiding the implementation of a new division-wide manufacturing (ERP) system. In 1999, he assumed the position of IT director for the Spicer Driveshaft Group.

Frank Lechlak is Director of Human Resources. Mr. Lechlak began his career with the Dana family in 1964. Since then, he has served as human resource manager and industrial relations manager for a number of Dana plants, divisions, and facilities. In January of 1998 he was promoted to director of human resources of Spicer Driveshaft.

Denise Wright began her Dana career in 1988 as a legal assistant with Dana risk management. In 1995, she joined Spicer Driveshaft as human resource administrator. In 1998 she transitioned into the position of human resource manager for Spicer Driveshaft Assembly, Inc.

Vince Morgillo joined the Dana family in 1973 as a production employee and assumed a variety of responsibilities from designer to laboratory quality supervisor. He joined Spicer Driveshaft in 1987, serving as the quality and manufacturing engineer for international operations, then as quality assurance manager and, since 1995, as director of quality for the Spicer Driveshaft Group.
Baldrige Award Winners Beat the S&P 500 for Eighth Year

Washington, D.C.—United States Commerce Secretary Don Evans announced the “Baldrige Index” has once again outperformed the Standard & Poor’s 500 (S&P 500).

The Baldrige Index is a fictitious stock fund made up of publicly traded U.S. companies that received the Malcolm Baldrige National Quality Award between 1991 and 2000. “Even after a tough year for the stock market, especially for technology stocks, the Baldrige Index continues to make a terrific showing, outperforming the S&P 500 for the eighth year. While performance in the stock market is only one indicator of success, this study and others show that businesses that seek excellence in everything they do can achieve success in many areas, including the bottom line,” said Secretary Evans.

The National Institute of Standards and Technology (NIST), the Commerce Department agency that manages the Baldrige National Quality Program, “invested” a hypothetical $1,000 in each of the whole-company winners—Eastman Chemical Company (1993 winner) and Solectron Corporation (a winner in 1991 and 1997)—and the parent companies of eighteen subsidiary winners. Another hypothetical $1,000 was invested in the S&P 500 for the same time period. The two whole-company winners outperformed the S&P 500 by almost 4.5 to 1, a 512% return on investment. The group of whole company winners plus the parent companies of subsidiary winners outperformed the S&P 500 by about 3 to 1, achieving a 323% return on investment, compared to a 110% return for the S&P 500.

All of the investments were tracked from the first business day of the month following the announcement of award recipients through December 3, 2001. Adjustments were made for stock splits.

While receiving a Baldrige Award or any other award is not a guarantee of success, to win the award organizations must show continuous and major improvements. For example, when Solectron Corporation won the Baldrige Award in 1991, revenue was $265 million with 1,500 employees. When they won again in 1997, revenue was $4 billion with 18,215 employees. In 2001, Solectron’s revenue was $18 billion with 60,000 employees. In another case, Federal Express Corporation won a Baldrige Award in 1990, and that year the company had revenues of $7 billion, 90,000 employees, and 1.5 million shipments a day. In 2001, Federal Express had revenues of $19.6 billion, 215,000 employees, and five million shipments a day.

Other studies also have found that organizations receiving quality awards show long-lasting improvements. For example, Vinod singhal of the Georgia Institute of Technology and Kevin Hendrick of the University of Western Ontario studied publicly traded firms that have won quality awards, including the Baldrige. The five-year study showed these firms improved in many areas, including stock price return, operating income, and sales.

The Baldrige National Quality Program is a public/private partnership. It was established in 1987 to improve performance in U.S. organizations. Awards are made to organizations that have substantially benefitted the economic or social well-being of the United States through improvements in performance excellence. Awards can be given in five categories: manufacturing, service, small business, education, and health care.

NIST, a non-regulatory agency regulatory agency of the U.S. Department of Commerce’s Technology Administration, develops and promotes measurements, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life.

For a copy of the Baldrige Index stock study, go to www.nist.gov/public_affairs/factsheet/stockstudy.htm or fax a request to (301) 926-1630.

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Introduction

At Dürr Environmental, I was challenged with implementing a quality management system (QMS), as defined by ISO 9001, in a service environment focused on project management. This article presents the methodology that enabled Dürr Environmental, a non-manufacturing organization, to achieve ISO 9001 registration by using process management as a tool.

I want to acknowledge the contribution of William Halczyn, Boeing A&T, for his presentation at GOAL/QPC’s "Process Management 2000" conference and his article in the Spring 2000 Journal of Innovative Management. The information in his paper was key to the finalization of the methodology presented here.

The context

Dürr Environmental, Inc. (DE), is a world-leading supplier of volatile organic compounds (VOCs) and hazardous air emission control systems. DE supplies a wide variety of industrial sectors, including automotive, semiconductor, wood, and cement. This is a challenge because it is difficult to be a technical expert in environments that are so diverse. Additionally, DE’s customers are located throughout North America as well as in Asia (mainly in Korea, Japan, and Taiwan), which represents a logistical challenge for a supplier of large systems.

DE does not have its own manufacturing facilities, so it outsources those activities when necessary. As a result, DE can be thought of as a general contractor whose activities are focused on services such as engineering, field operations, and outsourcing organized through project management.

At its peak, DE ran fifty to sixty projects per year with contract value ranging from $250,000 to $10 million. It is important to mention that due to the wide diversity of the customer base, every project is customized to the specific needs of each customer, which further complicates the management of the projects and the implementation of the quality management system.

The need

DE needed to achieve ISO 9001 registration for three reasons:

1. Corporate mandate from the Dürr Group requiring ISO 9001 registration for all of its units worldwide.
2. Customer requirement, as an increasing number of U.S. companies (just like...
The need, continued

...their European counterparts) require their suppliers to be ISO 9001 registered as a condition to do business with them. This is especially true for the U.S. automotive industry, which customized the ISO 9001 standard to their specific need and created the QS 9001 standard.

3. The desire of DE senior management to improve the company's operations.

The rationale is that the use of a standard methodology will allow the company to structure itself better, and improve its performance through error avoidance and reduction in warranty claims.

The issue

At the beginning of this QMS implementation we were dealing with the applicable ISO 9001 standard, the 1994 revision, which was oriented toward manufacturing operations. Since DE was not directly involved in manufacturing, ISO 9001:1994 was not very user friendly. Therefore, some level of interpretation of the standard was required. But this would introduce some additional risk in the QMS implementation process—an ISO registrar may not agree with our interpretation. Following are some examples of the complexity encountered:

Example 1. ISO 9001:1994 element 4.9, “Process Control.” This ISO 9001 element traditionally refers to the manufacturing processes. At DE we interpreted it as the company's core process—project management—quite a stretch!

Example 2. ISO 9001:1994 element 4.12, “Inspection and Test Status.” This element traditionally refers to the condition of the manufacturing output (such as “good-to-ship” or “needs rework”) and the associated actions. At DE we interpreted the element to be equipment start-up, testing, and project closeout. In other words, we are completing our project and we have to make any necessary adjustments to make the system operate as specified. This interpretation could be considered to be quite a stretch, too.

The process

We approached the situation by establishing a five-step methodology:

Step 1. Consider the business processes that constitute DE's operations. Essentially a back-to-basics approach, this step appeared to be the safest way to proceed into uncharted territory.

Step 2. Focus on core activities first. This consisted of all the project management activities.

Step 3. Develop all other activities in relation to the core activities. We looked at the company's other activities from a project management standpoint.

Step 4. Make it fit within ISO 9001. We included all ISO-required process additions (such as internal auditing) or upgrades (such as document and data control).

Step 5. Hope for the best. We anxiously awaited the registrar's assessment of the work performed, while making every effort to validate our approach with colleagues in the industry and other specialists in the field.

The rationale for this approach is that the ISO 9001 standard defines generic guidelines for establishing a QMS and, therefore, cannot dictate how a company is set up or even how it operates. Fortunately, and this was confirmed two years after starting on this path, this is the approach promoted in the most recent revision of ISO 9001, the ISO 9001: 2000. This revision actually makes life more difficult for the registrars, as they can no longer just rely on standard audit checklists because
everybody is now free to go his or her own way. However, as quoted in the March 2001 issue of Quality magazine, discussing the advent of ISO 9001:2000, “This is good news for those who attempted to implement reality-based quality management systems that reflect and build on actual business configurations and resources.”

**Key Concepts**

**Quality—ISO 9001: 2000**

The ISO 9001: 2000 standard provides the requirements for a QMS that serves the following purposes:

- Demonstrate the ability to consistently meet customer and regulatory requirements.
- Enhance customer satisfaction through the effective use of the system, including continual improvement, and assurance of conformity to customer and regulatory requirements.

The design of the QMS is influenced by the needs and objectives of the organization, the products and services provided, the processes employed, and the size and structure of the organization. The new ISO standard promotes the adoption of a process management approach, as it refers to process identification, interactions, and management.

**Project management**

The Project Management Body of Knowledge (PMBOK), published by the Project Management Institute (PMI), defines the practice of project management. This reference document has also been recognized as an ANSI standard and has served as reference for the ISO 10006: 1997 international standard, “Quality Management—Guidelines to Quality in Project Management.”

The PMBOK defines a project as a “temporary endeavor undertaken to create a unique product or service.” It further defines project management as “the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholders’ needs (identified requirements) and expectations (unidentified requirements) from a project.” Additionally, project management operates within a set of four interrelated constraints: scope (what the project consists of), time (schedule to execute it), cost (budget to execute it), and quality (meeting customer requirements).

The project management practice and knowledge are described in terms of processes, organized into nine knowledge areas:

1. Project integration management: overall coordination of the project.
2. Project scope management: assurance that the project consists only of the work required to successfully complete the project.
3. Project time management: timely completion of the project.
4. Project cost management: completion of the project within the approved budget.
5. Project quality management: satisfaction of the needs for which the project was undertaken.
6. Project human resources management: effective use of the people involved in the project.
7. Project communication management: generation, collection, dissemination, storage, and disposition of project information.


9. Project procurement management: acquisition of goods and services.

For reference purposes, the ISO 9001:2000 standard provides the following definition of project management: “Unique process, consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost, and resources.”

In short, ISO 9001: 2000 recognizes and even defines project management, and project management includes a lot of the ISO 9001: 2000 requirements.

Now that all of the basic concepts have been introduced, let’s move on to quickly review the relationship between quality and project management. Then we will address how to integrate them.

Quality in Project Management

As mentioned earlier, quality is one of project management’s nine areas of knowledge. As such, it relates to the application, in a project context, of quality concepts used essentially in manufacturing environments (Six Sigma, statistical process control, etc.). It is a widely covered topic, but of little relevance to a “pure” project environment such as DE’s.

Project Management in Quality

This essentially consists of the use of the project management methodology as an effective and efficient way to implement a QMS (per ISO 9001: 2000 or other quality-related standard). It is a recently emerged topic that is gaining a lot of attention within the quality circles, such as ASQ, but still offers little help in integrating the two concepts.

Quality and Project Management

We are considering here the implementation, at the enterprise level, of a project management system (per the PMBOK) that complies with the ISO 9001: 2000 standard requirements in order to obtain third-party registration. There has been very little work on the subject, and virtually no references on this topic exist.

It is clear that process management is common to both quality and project management, and therefore should be critical to their integration. We will now move on to the methodology and basic concepts involved in that integration.

The Process Approach

Let’s adopt a process management approach to analyze the company’s activities. The process approach used at DE is shown in Figure 1.
Steps in the process approach

The process approach consists of eight steps:

1. Process Definition: creation of an inventory of all the company's processes, whatever they are.

2. Process Classification: classification of the processes identified in Step 1 according to the company's Project (Business) Model.

3. Process Mapping: fully detailed description of each process, one by one, with special consideration to the inputs and outputs of each process.

4. Process Integration: ensurance of proper interaction between the processes as they relate to each other. The integration step is very important because any deficiencies will create gaps between processes where, inevitably, mistakes will occur. In a perfect world our effort would be complete at this point but reality is different, so several additional steps and their related processes (referred to as Feedback Loop, Continuous Improvement Loop, and Change Management Loop), must be added.

5. Internal Audit: verification of operation for compliance with established processes and procedures, effectiveness, and efficiency.

6. Performance Improvement: the company's efforts to better itself by increasing the effectiveness and efficiency of its established processes; this could be the result of benchmarking efforts.

7. Organizational Evolution: change in the organization as a result of market condition, change in the corporate structure, or even implementation of a new system.

8. Process Refinement: modification to the established processes as a result of internal audit findings, performance improvement decision, and/or organizational evolution.
ISO 9001: 2000 Implementation in a Project Management Environment

The above corresponds to a generic process management description, and it was used very successfully at DE.

The Project Life Cycle

To pursue the implementation of our methodology we need to use an additional concept from the theory of project management—the notion of Project Life Cycle. Projects are usually divided into phases to allow for better control, as well as appropriate links to the performing organization. Collectively, the project phases constitute the project life cycle. The phases are separated by “stage gates,” which act as intermediate project goals and check points that serve to guide the project team through the project execution.

Figure 2 is a schematic of the project life cycle used at DE. It is interesting to note that the project life cycle represents not only the natural flow of project activities, but it also corresponds closely to the contractual aspects of the project.

The Project (Business) Model

We define our business model as a combination of the process approach and the project life cycle concept. In the specific project environment of DE, we set up four categories of processes by adopting a project management perspective to the company’s activities. The categories are as follows:

1. Specific Project Processes—Project Life Cycle. These are the project processes that belong to a specific phase of the project life cycle.
2. Ongoing Project Processes. These are the project-related processes that do not belong to a specific phase of the project life cycle.
3. Ongoing Company Processes. These are the company processes that are not directly part of the project life cycle.
4. Quality Management System Maintenance Processes. These are processes required to build, maintain, and upgrade the QMS.

The model reflects the project orientation of the company and the centrality of project management in its operation.
The Enterprise Model

The Enterprise Model (Figure 3) is obtained by combining the process approach with the Project (Business) Model. This creates a macro-level view of the organization where the following functional description can be provided from the various portions of the Project (Business) Model:

- **Specific Project Processes**—Project Life Cycle corresponds to the core processes of the company.
- **Ongoing Project Processes** corresponds to the project supporting processes.
- **Ongoing Company Processes** corresponds to the company supporting processes.
- **QMS Maintenance Processes** corresponds to the QMS supporting processes.

This macro-level view of the company is what we refer to as “the Company ID Card.” It is a powerful and concentrated depiction of the company and its activities that can be used for a variety of purposes.

The Application

Dürr AIS is the newest member of the Dürr family, resulting from an acquisition. It is active in the field of industrial non-automotive paint-finishing systems for...
such industries as heavy trucks, motorcycles, and aerospace. For the first couple of years of operation, Dürr AIS was located in the DE building, and was sharing some of DE’s services.

Because of its involvement in the aerospace industry, Dürr AIS had an urgent need to obtain ISO 9001 registration, a basic requirement to conduct business with customers like Boeing. I was approached to lead the ISO registration effort in parallel to DE’s.

Despite the fact that Dürr AIS is active in a different industry than DE, its operations also rely completely on project management. Our first attempt at using the methodology described above proved to be 100% applicable, and provided us a first validation of the methodology. Dürr AIS was registered to ISO 9001: 2000 in September 2001.

In 1999, DE acquired a competitor—Reeco, Bridgewater, New Jersey. Initially, the newly acquired company was handled as a fully owned subsidiary, with little concern for integration and no immediate concern about ISO 9001 registration. Then, in January 2000, Reeco became the Standard Product Division of DE, creating an immediate need for the integration of the operations of the two entities and a need for ISO 9001 registration for the new division. The enterprise model was used to create a macro-level description of Reeco’s operations, modeling the company into a series of processes. As a result, it became easier to sort the processes into:

a. Common processes that would need to be jointly developed and agreed upon by both entities.
b. Reeco-specific processes that would need to get developed independently while watching for integration with DE’s processes.

This approach, a direct application of the enterprise model, considerably eased the initial work involved in the integration of the two companies.

Conclusions

1. ISO 9001: 2000 and project management are fully compatible and can be integrated through the use of process management.
2. The model and methodology described in this article should be transferable to all project environments; extension should be possible to the pharmaceutical field (drug development), information technology field (software development), defense contracting field (weapon system development), and construction field.
3. The model generates a Company ID Card, a powerful tool that provides a synoptic rendering of the company.
4. The model generated represents an excellent starting point for continuous improvement and reengineering efforts as well as an excellent baseline representation for change management endeavors.
5. The process approach is universal.
References


Author information

This article is based on a presentation by Yves Pszenica, PM P, at the GOAL/QPC conference, “Process Management 2001.” At that time Yves was Business Process Reengineering Manager for Dürr Environmental. During his career, Mr. Pszenica, a PMI certified Project Manager, has managed construction, engineering, and IT projects in a wide variety of industries including automotive, semiconductor, wood, and chemical. His project management and international business activities brought him all across the United States, Europe, and Asia. He has worked for Volkswagen, General Motors, ABB, and Dürr.

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