Executive Summary:

The Baldrige Awards are given each year to the US companies that demonstrate outstanding performance and knowledgeable use of quality control and business process management techniques. In this issue, we review how the awards are made and consider some past winners. Deciding to dedicate an organization to achieving a Baldrige Award is one way an executive team can organize a major effort to move a company toward a greater focus on process and quality.

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The Baldrige National Quality Awards Program

The Baldrige National Quality Awards Program is managed by the US Commerce Department’s National Institute of Standards and Technology (NIST) in conjunction with the private sector. The program promotes awareness of Quality Control, and publicizes the successes of organizations with successful performance strategies with annual awards. These awards are the most prestigious awards US companies can achieve for outstanding achievements in the area of Quality Control or Business Process Improvement. US companies that have won Baldrige Awards tend to the leaders in the movement toward creating process-centric organizations.

The emphasis on Quality Control is a direct result of the work of individuals like W. Edwards Deming and Joseph Juran. Everyone has heard the story of how Deming was invited by General MacArthur to come to Japan in the aftermath of World War II to help with the reindustrialization of that country. Before going to Japan, Deming had been the head statistician for the US census, and a champion of the use of statistics to improve the quality of US production during World War II. Once in Japan, Deming proceeded to encourage Japanese companies to embrace a Quality Control program that helped make them into the fierce competitors they are today. As an acknowledgment of this, in 1951 Japan established an award for companies that demonstrated outstanding quality control, and named it the Deming Prize.

US industry largely ignored Deming, Juran, and others who advocated Quality Control until the Eighties, when the outstanding quality of many Japanese products began to cut into the sales of their leading US competitors. Then, in response, US companies began to create their own Quality Control programs. By 1984, over 3,000 quality circles had been established in American companies, and Deming was finally established as a respected consultant in the US. As the Eighties progressed, US companies explored a variety of initiatives to increase the quality of their products and services. In the mid-Eighties, the Motorola Corporation combined Quality Control and Business Process Improvement techniques to create the Six Sigma methodology, which has since spread to many other US companies.

During this same period, the US government decided that it should create its own national Quality Control award program. The Malcolm Baldrige National Quality Award was created by a law that was signed by the president in August of 1987. The law established a Foundation that oversees the award which is supported by the National Institute of Standards and Technology (NIST), an agency of the US Department of Commerce. The award was named for Malcolm Baldrige, the US Secretary of Commerce from 1981-1987, who had done much, during his tenure, to encourage US companies to be more quality conscious.

The first awards were given in 1988. Initially, awards were given to small businesses and to manufacturing organizations that evidenced outstanding quality control.
practices. Since then, the award categories have been expanded, and the program now recognizes outstanding performance in small business, manufacturing, service organizations, health care organizations, and educational organizations.

The Baldrige Program

In essence, organizations nominate themselves by submitting an application for the award. Each year, the Baldrige program publishes Eligibility Criteria, and companies wishing to apply must then draft an application that describes how they evidence each of the criteria. There are different criteria for different kinds of organizations (e.g., small businesses, manufacturing, service businesses, health care, education)

- The application forms and criteria are made available by January.
- In March, examiners are selected for that year.
- Application submissions are due in April.
- In the summer and fall the examiners consider the applications, narrow the field, and arrange site visits for finalists. In some years awards are only given to a subset of the various categories. In other years multiple awards are given for the same category. In 2003 the judges met on Sept. 18th and reduced the applications from 68 organizations to 13 that received site visits by teams of examiners.
- The awards are given at the annual Baldrige conference which is held in the Spring of the following year. The conference is in Washington, DC, and the President of the US usually speaks to underline the importance of this awards program.

The conference at which the 2004 awards will be presented, Quest for Excellence Conference XVII, will be held at the Marriott Wardman Park Hotel in Washington DC on April 10-13, 2005. For more information, check www.quality.nist.gov?Quest_for_Excellence.htm

How Companies Are Judged

The Baldrige criteria by which business organizations are judged are reviewed each year and significant improvements are introduced every few years. The criteria used for business organizations in 2004 described in Table 1. Different criteria are used for educational and health care organizations.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Baldrige 2004 Business Organization Criteria</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Leadership</td>
<td>1.1 Organizational Leadership</td>
<td>70 points</td>
</tr>
<tr>
<td></td>
<td>1.2 Social Responsibility</td>
<td>50 points</td>
</tr>
<tr>
<td>2. Strategic Planning</td>
<td>2.1 Strategy Development</td>
<td>40 points</td>
</tr>
<tr>
<td></td>
<td>2.2 Strategy Deployment</td>
<td>45 points</td>
</tr>
<tr>
<td>3. Customer and Market Focus</td>
<td>3.1 Customer &amp; Market Knowledge</td>
<td>40 points</td>
</tr>
<tr>
<td></td>
<td>3.2 Customer Relationships &amp; Satisfaction</td>
<td>45 points</td>
</tr>
<tr>
<td></td>
<td>4.2 Information and Knowledge Management</td>
<td>45 points</td>
</tr>
<tr>
<td>5. Human Resource Focus</td>
<td>5.1 Work Systems</td>
<td>35 points</td>
</tr>
<tr>
<td></td>
<td>5.2 Employee Learning &amp; Motivation</td>
<td>25 points</td>
</tr>
<tr>
<td></td>
<td>5.3 Employee Well-Being and Satisfaction</td>
<td>25 points</td>
</tr>
<tr>
<td>6. Process Management</td>
<td>6.1 Value Creation Processes</td>
<td>50 points</td>
</tr>
<tr>
<td></td>
<td>6.2 Support Processes</td>
<td>35 points</td>
</tr>
<tr>
<td>7. Business Results</td>
<td>7.1 Customer-Focused Results</td>
<td>75 points</td>
</tr>
<tr>
<td></td>
<td>7.2 Product &amp; Service Results</td>
<td>75 points</td>
</tr>
<tr>
<td></td>
<td>7.3 Financial &amp; Market Results</td>
<td>75 points</td>
</tr>
<tr>
<td></td>
<td>7.4 Human Resource Results</td>
<td>75 points</td>
</tr>
<tr>
<td></td>
<td>7.5 Organizational Effectiveness Results</td>
<td>75 points</td>
</tr>
<tr>
<td></td>
<td>7.6 Governance &amp; Social Responsibility Results</td>
<td>75 points</td>
</tr>
<tr>
<td>TOTAL POSSIBLE POINTS</td>
<td></td>
<td>1000</td>
</tr>
</tbody>
</table>
Table 1 provides an overview of the categories and subcategories that candidate business organizations must document, and that inspectors will explore in site visits. It also indicates how many points can be achieved in each category and subcategory.

A casual glance at Table 1 might suggest that process management only plays a small part in the Baldrige award. In fact, most of the items pictured in Table 1 are related to processes, even though the Baldrige committee asks that things be documented in accordance with the outline pictured in Table 1. To explain this, we need to look at some of the categories described in Table 1 in a little more detail.

First, however, consider Figure 1, on the next page, which illustrates why business processes are the key to organizational alignment. If a company has a widely used process architecture, then it understands how its strategies and goals are to be achieved by specific processes. The process models describe what has to be done to satisfy organizational goals, produce goods and services, and satisfy customers.

Once a company understands its processes, it is in a position to organize all its implementation resources in terms of its processes. Thus, when management decides to emphasize a specific goal, the processes that support that goal are given a higher priority. In turn, all of the resources that support the processes are given more attention. In effect, resources achieve priority because they support processes that support priority goals.

Seen in this light, Customer and Marketing Focus depend on well designed customer facing processes, which must be achieved at the architecture, process, and implementation levels. Measurement is based on processes achieving their goals. Work systems, training, and knowledge management all exist to support the implementation of processes, just as databases, applications and computer infrastructure also exist to support business processes.

In our opinion, the Baldrige Criteria are not as tightly organized around a process-centric approach as they could be, and we wish they were better organized to promote a commitment to a process-centric management approach. But that's just our bias. It's easy enough to see how one can conceptualize the criteria as all linked to processes.

Ms. Pamela J. Garretson, the Director of Performance Excellence at the Boeing Airlift and Tanker Programs, an organization that has won the Baldrige Award, and someone who is much more knowledgeable about the Baldrige Awards that we are, had this comment about the Baldrige Awards:

"Although the criteria themselves devote a complete Category (6) to process management, every time, throughout the criteria, that a question is asked that begins with the word "how," they are asking for a process response! So processes are embedded at the core of the criteria and are driven into every aspect of the criteria framework.

"Additionally, although the Categories are separated into specific areas of emphasis, the criteria ask questions that require the applicant to address integration and ensure that impact in one area drives through to results. For example, in the Organizational Profile, the applicant is asked to describe its strategic challenges in addition to the requirements that its customers have. In Category 2, the applicant is then asked to describe what strategic planning initiatives and objectives it is putting into place that will mitigate those challenges and meet the customer requirements. In Category 4, it has to describe the measures for the action plans that implement its strategies. For many applicants, those measures are process outcomes. In Category 6, the applicant is asked to list the process outcomes that provide evidence that its action plans for implementing its strategy are, in fact, being accomplished. It is also asked to describe what process measures it has that relate back to satisfying the customer requirements from the Organization Profile. The Category 7 results, then, focus back on evaluation and improvement of organizational process, products and services and should tie to those things the applicant mentioned earlier as being important to the business. So the integration aspect of the criteria actually becomes a spaghetti chart of linkages – the purpose is to promote integrated approaches, deployment, and organizational learning (or improvement!), all of which result in superior performance."[1]

With all this in mind, let's turn to some of the specific Baldrige Criteria items, beginning with

2.2 Strategic Deployment
Describe how your organization converts its Strategic Objectives into Action Plans. Summarize your organization’s Action Plans and related Key Performance Measures or Indicators. Project your organization’s future Performance on these Key Performance Measures or Indicators.[2]

The Baldrige Award literature tends to use the term "performance" to describe process outcomes. Obviously, a company could establish Action Plans that were passed to
Organization diagrams and Process Architecture diagrams allow everyone in the organization to **understand just how processes are related** to each other.

The same analysis allows organizations to create **measurement and management systems** that assure manager's control processes to achieve organization goals.

Corporate resources, in turn, can be organized to show how they contribute to the achievement of specific processes or activities.

Figure 1. Alignment starts with goals, proceeds via a process architecture, and then, via specific processes and process measures, to employee and IT support resources.
department heads, but the emphasis on process, that we will observe later, suggests that, in fact, Action Plans will generally involve changes in business processes, or the establishment of new business processes. Similarly, in most cases, performance measures will refer to process outcomes. In process-centric companies, alignment runs from strategic goals to process goals to resources that are used to achieve those process goals. Thus, one assumes, an ideal Baldrige award winner, will use Strategic Deployment to establish goals and measures for business processes.

Next, consider how the Criteria booklet describes

3.2 Customer Relationships and Satisfaction
Describe how your organization builds relationships to acquire, satisfy, and retain Customers, to increase Customer loyalty, and to develop new opportunities. Describe also how your organization determines Customer satisfaction.

To our mind, the Baldrige criteria emphasizes Customers, generically, rather than emphasizing customer satisfaction with processes or process outcomes. Quality Control gurus have always placed considerable emphasis on customer relationships and satisfaction. However, they have also placed considerable emphasis on working with suppliers to assure quality, but there’s no special emphasis within the Baldrige criteria on supply issues. Still, customers are important, and processes either produce happy customers, or they don’t. We’d rather see Customer Relationships treated in the context of a value chain and processes, it is easy enough to document it separately.

Ms. Garretson of Boeing’s Airlift and Tanker Programs made this comment on our quibbles about how the Criteria treated Customer Relationships:

"The focus on the internal customer is important, and considered, but in looking at what makes companies world-class, the focus in the criteria is on customer-driven excellence, from the perspective that despite what a company thinks its doing internally, its quality and performance are truly judged by the perception of its customers. So the applicant needs to understand what differentiates it from its competitors, needs to understand its customers’ requirements, and needs to focus not only on satisfying those customers but on increasing their loyalty to ensue long-standing future business."

Next, let's consider the Baldrige description of Measurement

4.1 Measurement and Analysis of Organizational Performance
Describe how your organization measures, analyzes, aligns, and improves its Performance data and information at all levels and in all parts of your organization.

Every company needs organizational measures and performance data. But it makes a difference if the data is derived from departments, based on arbitrary criteria -- like reducing the overall cost of a department -- or whether the data comes from process measures and can be directly related with process outcomes. Once again, it’s easy to see how measures can be aligned with processes. We just wish the Baldrige criteria stressed the relationship between processes and measures in a more overt manner.

The Baldrige emphasis on Knowledge Management, as a subcategory of Information and Measurement is even more confusing:

4.2 Information and Knowledge Management
Describe how your organization ensures the quality and availability of needed data and information for employees, suppliers, partners, and customers. Describe how your organization builds and manages its Knowledge Assets.

One is tempted to be a Devil’s Advocate, and ask why one needs to manage knowledge, how one justifies the cost of Knowledge Management (KM), or similar questions. The answer, clearly, is that employees performing processes use knowledge in their work. So why isn’t Knowledge Management treated under Work Systems. More important, why aren’t work systems treated under Process Management? Obviously, managing workers is a key organizational task, but, once again, a process-centric company doesn’t treat employees as something independent, but rather as a resource to accomplish its processes and activities. Here’s how Baldrige describes the Human Resource subcriteria:

5. Human Resource Focus
5.1 Work Systems
Describe how your organization’s work and jobs enable employees and the organization to achieve High Performance. Describe how compensation, career progression, and related workforce practices enable employees and the organization to achieve High Performance.

... Item b. Employee Performance Management System: How does your Employee Performance Management System,
including feedback to employees, support High-Performance Work? How does your Employee Performance Management System support Customer and business focus? How do your compensation, recognition, and related reward and incentive practices reinforce High-Performance Work and Customer and business focus?

5.2 Employee Learning and Motivation
Describe how your organization’s employee education, training, and career development support the achievements of your overall objectives and contribute to High Performance. Describe how your organization’s education, training, and career development build employee knowledge, skills, and capabilities.

... Item a-6. How do you evaluate the effectiveness of education and training, taking into account individual and organizational performance.

These criteria clearly describe the way jobs are defined and how employees are taught and motivated to accomplish work. But, once again, one wonders how one is to decide if a job is scoped properly, where feedback for a specific job will come from, or whether training is properly designed or not. Human performance analysts, starting with Rummler and Brache,[3] have all argued, as we do, that jobs and employees are elements of processes. It’s the process that defines the jobs that need to be done. It’s the outcome of the process, ultimately, that determines if the job is done effectively. An examination of the tasks required by a process determines what training is required and what knowledge must be accessed to accomplish the job. Once again, if one thinks of organizations in terms of processes, this relationship is obvious, and Baldrige winners may all consistently think about it this way. Our point, however, is that the Baldrige Criteria could be used to force all applicants to think more about how processes are used to align organizations. Instead, the criteria seem, in many cases, to be just a checklist of items that a departmentally-oriented, silo-based organization could respond to just as easily as a process-centric organization.

On the other hand, in spite of all of our quibbles, there is a major section of the Baldrige Criteria devoted to the importance of business processes:

6.1 Value Creation Processes
Describe how your organization identifies and manages its Key Processes for creating Customer Value and achieving business success and growth.

Item a. Within your response, include answers to the following questions:
1. How does your organization determine its Key Value Creation Processes? What are your organization’s Key product, service, and business processes for creating or adding value? How do these Processes create Value for the organization, your Customers, and your other Key Stakeholders? How do they contribute to profitability and business success?
2. How do you determine Key Value Creation Process requirements, incorporating input from Customers, suppliers, and partners, as appropriate? What are the Key requirements for these Processes?
3. How do you design these processes to meet all the Key requirements? How do you incorporate new technology and organizational knowledge into the design of these processes? How do you incorporate Cycle Time, Productivity, Cost Control, and other efficiency and effectiveness factors into the design of these Processes? How do you implement these Processes to ensure they meet design requirements?
4. What are your Key Performance Measures or Indicators used for the control and improvement of your Value Creation Processes? How does your day-to-day operation of these Processes ensure meeting Key Process requirements? How are in-process Measures used in managing these Processes? How is Customer, supplier, and partner input used in managing these processes, as appropriate?
5. How do you minimize overall costs associated with inspections, tests, and Process or Performance Audits, as appropriate? How do you prevent defects and rework, and minimize warranty costs, as appropriate?
6. How do you improve your Value Creation Processes to achieve better Performance, to reduce variability, to improve products and services, and to keep the Processes current with business needs and directions? How are improvements shared with other organizational units and Processes?

Any organization that develops an application for the Baldrige Award program is clearly going to have to think quite a bit about business processes, and these questions suggest many of the relationships we have commented on in discussing earlier criteria. We would argue that the criteria could be revised to emphasize that processes are at the center of the alignment effort, but we expect that most of the winners have figured that out for themselves.

Finally, there’s the Criteria for performance results
7.1 Customer-Focused Results
7.2 Product & Service Results
Summarize your organization’s Key product and service Performance Results. Segment your Results by product groups, customer groups, and market segments, as appropriate. Include appropriate comparative data.
7.3 Financial & Market Results
7.4 Human Resource Results
7.5 Organizational Effectiveness Results
7.6 Governance & Social Responsibility Results

We only provided detail on one. As you can see, the Baldrige judges are going to have to look at results in a variety of different ways, depending on the organization.

Obviously, the results are similar to the currently popular Balanced Scorecard criteria. We happen to like the Balanced Scorecard approach in the abstract, but, just as we complain that the Baldrige criteria are not rigorous enough in stressing and measuring results in terms of processes, we would say the same of many Balanced Scorecard implementations. They are better than nothing, but often the Balanced Scorecard efforts are not tightly tied to a process architecture and product suboptimal results.[4]

In Figure 2, we’ve summarized how we would prefer to talk of the various sets of Baldrige criteria by mapping them unto the BPTrends Pyramid.

Strategic Planning (2) is clearly what we normally talk about at the Strategy Level.

The criteria included in (3) Customer and Market Focus range from the Business Process Level through to the Implementation Level. In effect, if one has well defined Customer Facing Processes, and they are properly measured, then this set of criteria is covered.

Most of the criteria in (4) Measurement, Analysis, and Knowledge Management are also treated at the Business Process Level. Broad process measures should be part of the corporate process architecture, or, in some cases, derived from specific processes. We tend to put Knowledge Management at the HR Implementation Level, but the point is that KM should be conceptualized as a way of capturing knowledge that employees will use to implement a process. In a similar way, what Baldrige clusters under (5) Human Resource Focus, we would place in the HR Implementation area of the pyramid, arguing that these criteria should be conceptualized as supporting processes or subprocesses.
It’s only by considering goals, and processes to achieve those goals, that we arrive at priorities. It should be those same process priorities that determine what training is needed and when.

Obviously the criteria clustered under (6) Process Management lie at the process level. Some of the subcriteria are concerned with architectural issues, but most are concerned with accurately defining and improving processes.

Keep in mind that the Baldrige Awards were established in the mid-Eighties and were dominated by those from the Quality Control tradition. They have been changed since, but still reflect, in our opinion, a less than rigorous process-centric model. Perhaps this makes sense for a national awards program that isn’t in a position to suggest to companies how they should organize themselves. The award is the most prestigious award available to promote process excellence, however, so we can't help but wish it would promote process alignment more vigorously. Still, as Ms. Garretson suggests, successful applicants understand that the award emphasizes process alignment, and that, ultimately, is what's important.

The Winners: 1988 to 2003

The first Baldrige Awards were given to outstanding companies that participated in the initial contest in 1988. One award was given to a small business, and two were given to manufacturing companies. Motorola was recognized, in large part, as a result of its work with Six Sigma.

In 1990, the program also began to also give an award to service companies. In 2000, awards were added for educational organizations, and, in 2002, health care organizations were established as an additional award category.

In the list that follows, we list all the Baldrige Award winners.

1988
Small Business:
Globe Metallurgical Inc.
Manufacturing:
Motorola Inc.
Westinghouse Electric Corp. Commercial Nuclear Fuel Division

1989
Manufacturing:
Milliken & Company
Xerox Corp., Business Products & Systems

1990
Small Business:
Wallace Co., Inc.
Manufacturing:
Cadillac Motor Car Company
IBM Rochester
Service:
Federal Express Corp.

1991
Small Business
Marlow Industries, Inc.
Manufacturing
Zytec Corp. (Now part of Artesyn Technologies)
Solectron Corp.

1992
Small Business
Granite Rock Company
Manufacturing
AT&T Network Systems Group Transmission Systems Business Unit (Now Lucent Technologies, Inc. Optical Networking Group)
Texas Instruments Inc. Defense Systems & Electronics Group (Now part of Raytheon Systems Co.)
Service:
AT&T Universal Card Services (Now part of Citigroup)
The Ritz-Carlton Hotel Co. (Now part of Marriott International)

1993
Small Business:
Ames Rubber Corp.
Manufacturing:
Eastman Chemical Co.

1994
Small Business:
Wainwright Industries, Inc.
Service:
AT&T Consumer Communications Services (Now the Consumer Markets Division of AT&T)
Varizon Information Services (Formerly GTE Directories Corp.)

1995
Manufacturing:
Armstrong World Industries, Inc., Building Products Operations
Corning Inc., Telecommunications Products Div.

1996
Small Business:
Custom Research Inc.
Trident Precision Manufacturing, Inc.
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1996
Manufacturing:
   ADAC Laboratories
Service:
   Dana Commercial Credit Corp.

1997
Manufacturing:
   3M Dental Products Div.
   Solectron Corp.
Service:
   Merrill Lynch Credit Corp.
   Xerox Business Services

1998
Small Business:
   Texas Nameplate Company, Inc.
Manufacturing:
   Boeing Airlift and Tanker Programs
   Solar Turbines Inc.

1999
Small Business:
   Sunny Fresh Foods
Manufacturing:
   STMicroelectronics, Inc., Region Americas
Service:
   BI
   The Ritz-Carlton Hotel Co., L.L.C.

2000
Small Business:
   Los Alamos National Bank
Manufacturing:
   Dana Corp., Spicer Driveshaft Div.
   KARLEE Company, Inc.
Service:
   Operations Management Inter., Inc.

2001
Small Business:
   Pal’s Sudden Service
Manufacturing:
   Clarke American Checks, Inc.
Education:
   Chugach School District
   Pearl River School District
   University of Wisconsin, Stout

2002
Small Business:
   Branch-Smith Printing Division
Manufacturing:
   Motorola Commercial, Government & Industrial
   Solutions Sector
Health Care:
   SSM Health Care

2003
Small Business:
   Stoner, Inc.
Manufacturing:
   Medrad, Inc.
Service:
   Caterpillar Financial Services Corp., US
   Boeing Aerospace Support
Education:
   Community Consolidated School District 15
Health Care:
   Saint Luke’s Hospital of Kansas City
   Baptist Hospital, Inc.

A Detailed Look at One Winner: Boeing Airlift & Tanker Programs

Having considered the process and the criteria, we decided it would be good to look at one winner in more depth. We choose Boeing, and, more specifically, since two different Boeing divisions have won Baldrige awards, we decided to look into the 1998 winner, the Boeing Airlift and Tanker (A&T) Programs.

Brief descriptions of winners are published on the Baldrige Awards site. In some cases, the entire application is published, which provides a very detailed look at the company in question. We wanted personal insight, however, and selected Boeing A&T because a member of one of our workshops facilitated our having a conversation with Pamela Garretson, the Director of Performance Excellence at Boeing. Thus, we were able to ask questions and gain an insider’s perspective on what it took to win a Baldrige Award.

In 1998, when the Boeing A&T group won the Baldrige Award, they were designing, developing and producing the C-17 Globemaster 111 airliner, a plane capable of carrying a 170,000 pound load. They were are also responsible for the C-32 and C-40 aircraft programs and provide customer support personnel at major Air Force bases. Since then, they have added the 767 Tankers Program. Their primary customer is the US Air Force. The group employs over 8,700 people who work at the group’s headquarters in Long Beach, CA, in Macon, GA, in Seattle, WA, and in St. Louis, MO. Seven unions represent 55 percent of the A&T workforce.

Boeing A&T sales in 1997 exceeded $2 billion.

Boeing A&T’s commitment to process and quality began in the mid-Nineties as a direct result of problems the group
Boeing A&T has a high-level "enterprise process model" that defines the entire business as eight interconnected process families. These families, in turn, encompass up to 10 major processes which are, in turn, made up of several tiers of supporting subprocesses. In all, A&T has 55 major processes. It recognizes 7 levels of processes below those major processes. Boeing A&T also has functional units (departments) and, thus, effectively relies on a matrix management model. A&T refers to its process management framework as the Enterprise Process Model (EPM). All managers are aware of their role in process management. Senior executives of A&T routinely lead quality awareness sessions with A&T suppliers, who number more than 600, and account for two-thirds of the cost of a C-17 aircraft.

A&T uses a Strategic Planning Process (SPP) that sets strategies that lead directly to improving processes. It also identifies deviations and formulates strategies to close performance gaps. Planning outputs are organized into an annually updated 10-year operating plan. To help with the planning, A&T has developed a seven-step approach to defining, managing, stabilizing, and improving processes. This process-based management approach, also called the PBM methodology, is used to set metrics for processes that are then used to drive customer satisfaction, quality, timeliness, and cycle time.

Each of the processes has a process owner, who doesn't own the resources, which generally reside in the functional units, but is responsible for maintaining the process focus of all concerned. At the same time, Boeing A&T has shifted many management responsibilities to empowered teams. Jobs have been redefined and broadened so that two-thirds of A&T factory employees are now in the same classification and 90% of the engineers occupy a single job family. The teams often come up with process improvements that save significant time and money. The teams are responsible for meeting all quality, technical, schedule, and cost requirements for their units.

Pamela Garretson is responsible for supporting all those who focus on processes. Her group has four process analysts, and works with some 250-300 process owners who are located in various functional units. The unit provides training and support for process and quality improvement efforts. It trains all how process owners, for example.

Boeing has a Six Sigma program that focuses on quality improvements, but A&T's overarching methodology for process improvement is PBM and it works to integrate other improvement initiatives such as Six Sigma, Lean and Variability Reduction with PBM. Similarly, Boeing A&T is involved in Lean Assessment, in ISO 9000, and in CMMI documentation and evaluations, and Ms. Garretson's group works with all these initiatives, and can also prepare a Baldrige application, when required.

By 1998, Boeing A&T was so confident in its new process and quality control system that it applied for the Baldrige Award. In 1998, Boeing A&T's share of the US military airlift market was 84%, almost 8 times that of its nearest competitor. In 1994, productivity per employee was $200,000, and by 1998 it was $327,000 per employee. The company credits its team structure with better than 60% of the improvement in productivity. Partnering with suppliers also paid off. Rejection rates dropped from 0.9 percent in 1994 to 0.08 in 1998. Similarly, supplier on-time delivery jumped from 75.9% in 1994 to 99.8% in 1998. A&T worked to improve the performance of each of its 50 major processes. From 1994 to 1998 performance on key quality measures improved 50 percent. During the same period, A&T cut cycle time by more than 80 percent. Since 1992, time spent on rework and repair of the C-17 had been reduced by 54%, a solid indicator of quality gains. During the same period, mean time between corrective maintenance increased eightfold. In 1998, the C-17s level of performance was nearly four times that of the next best competitor's aircraft.

These are the kinds of results that led to Boeing A&T winning the Baldrige Award in 1998.

What impressed me as much, however, is a fact that came out in my discussion with Ms. Garretson. In asking about various process issues, we happened to ask how the Boeing A&T group was dealing with Sarbanes-Oxley. Ms. Garretson explained that Boeing A&T has a leg up on compliance to Sarbanes Oxley. The reporting requirements and measures
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are being driven into their existing process structure. In effect, A&T already has the system and most of the measures in place to handle the Sarbanes-Oxley reporting requirements!

In 2003, the Boeing Aerospace Support (AS) Organization won a Baldrige Award. Meantime, the A&T group isn't resting on their laurels. The Baldrige Award waits 5 years before giving the award, again, to a previous winner. Thus, the A&T group will be eligible to apply again in 2004, and they are already planning on winning the Baldrige Award a second time.

Summary

The Baldrige Award was set up in the Eighties, when the US was very concerned with Quality. Even as the award was being established, Motorola was moving beyond a narrow focus on Quality Control and combining Quality Control with Process Improvement. Today's Baldrige Award clearly embraces both Quality Control and a Process-Centric approach to organizing and managing organizations. We might wish the emphasis on process alignment was laid out in a more rigorous way, but clearly the companies that apply for the Baldrige Awards understand the importance of process and that, after all, is what's important.

Any quibbles we have can be set aside when one looks at a Baldrige winner, like Boeing Airlift and Tanker Programs, or any of the other recent winners. Clearly, to achieve the kind of results that Baldrige winners achieve, a large company needs a process-centric approach.

The Baldrige Award is a great way to focus attention on US companies that are doing a truly outstanding job. Hopefully, the annual winners will serve to inspire other companies to embrace a process-centric, quality-focused approach to management.

Notes

The Baldrige program is a program sponsored by the US government. For more information, visit the Baldrige site: www.baldrige.nist.gov

[1] The quotations from Pamela J. Garretson of Boeing are from an email she wrote, providing feedback on a first draft of this newsletter. The final product is better for her inputs, and we appreciate them, though, of course, she is in no way responsible for our comments.

[2] All the italicized sections are direct quotations from the 2004 Criteria for Performance Excellence available on the Baldrige website.


We don't know of programs similar to Baldrige, that are offered by other national governments, but would be pleased to learn about them. Readers could either send us pointers to appropriate websites, or, better, volunteer to write an article describing other national quality or process awards programs for BPTrends readers.

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