## BALDRIGE NATIONAL QUALITY PROGRAM

**Avoid Random Acts Of Improvement With Baldrige**

by **John Werner**

hen organizations are pursuing im- provement, one critical success factor is selecting the right things to

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work on. An organization can use the best project execution methods, such as Six Sigma and lean, but be disappointed with the results if key strategic goals haven’t been addressed.

**In 50 Words**

**Or Less**

* **The Baldrige National Quality Program’s improvement model can help guide organizations to select projects that align with strategic needs and focus on maintaining their value chains.**
* **There is strong alignment between the purpose of the Baldrige criteria and the combination of Six Sigma and lean.**

The list of organizational goals often includes:

* Grow the organization through more revenue, customers and market share.
* Improve profits (or, for not-for-profit organi- zations, realize revenue greater than expens- es).
* Contribute to the development of employees or members.
* Contribute to the development of their com- munities.
* Delight customers and other stakeholders.

It could be argued that most organizations want to accomplish all of these things. But how do they reach their goals, beyond having brilliant leader- ship or just being lucky? The answer is that they look for best practice models and adapt them to their organizations.

Some recent studies show what many organiza- tions are doing to select and adapt best practice models (see “Recent Research,” p. 36).

### **Baldrige Model**

If research and experience suggest that a robust method such as Six Sigma combined with lean will not by itself guarantee a successful organizational

improvement outcome, it appears organizations should start improvement efforts by first consider- ing the criteria or characteristics of the best practice model they plan to follow.

Most skilled organizational improvement prac- titioners would argue that you want a whole sys- tem model, similar to the approach advocated by

W. Edwards Deming.1 You also need to use a robust, top-down process to identify the right pro- jects.

One proven whole system model is the Malcolm Baldrige National Quality Award’s improvement model (see Figure 1). As illustrated in Table 1, the Baldrige model is based on a set of core values and concepts that resonate well with most organiza- tions that are focusing on organizational excel- lence.

The Baldrige criteria2 provide a systems perspec- tive for managing an organization and its key processes to achieve performance excellence.

It’s worth mentioning that most organizations that have used the Baldrige criteria do so only to complete internal self-assessments, not to apply for the award.

### Baldrige Systems Model

**FIGURE 1**

**Baldrige Core Values and Concepts for Businesses**

* Visionary leadership • Focus on the future
* Customer-driven • Management for excellence innovation
* Organizational and • Management by fact personal learning • Social responsibility
* Valuing employees and • Focus on results and partners creating value
* Agility • Systems perspective

Note: Slightly different for healthcare, education and

not-for-profits. For example, customer driven excellence is called patient focused excellence in the healthcare criteria.

**TABLE 1**

The seven Baldrige categories in the improve- ment model along with these core values and concepts are the building blocks and integrating mechanism for the system. Under Baldrige, successful management of overall performance requires organization specific synthesis, alignment and integration:

* **Synthesis** means looking at your organization

as a whole and build- ing on key organization requirements, includ- ing strategic objectives and action plans.

* + **Alignment** means

Baldrige Criteria for Performance Excellence framework: a systems perspective

2

Strategic planning

5

HR focus

using the key linkages among requirements given in the categories to ensure consistency of plans, processes, mea- sures and actions.

* **Integration** builds on alignment so the indi- vidual components of the performance man- agement system oper- ate in a fully connected manner.3

7

Results

6

Process management

Organizational profile: environment, relationships and challenges

4

Measurement, analysis and knowledge management

### **Baldrige Scoring System**

The underlying purposes of the Baldrige criteria and the Six Sigma and lean com-

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3

Customer and market focus

1

Leadership

bination also align strongly: to improve organi- zational performance and demonstrate results through tracked performance measures.

As shown in the second column of Table 2, each of the criteria categories and subcategories is assigned point values to indicate relative impor- tance. These point values total 1,000 and are then used in conjunction with a score to arrive at a weighted score.

The Baldrige scoring system is based on two evaluation dimensions: process and results.

**Process.** Process refers to the methods an organi- zation uses and improves to address the require- ments in the first six Baldrige categories. The four

factors used to evaluate process are approach, deployment, learning and integration:

1. Approach refers to the methods used to accom- plish the process, the appropriateness of the methods to the item requirements, the effec- tiveness of the use of the methods and the degree to which the approach is systematic (repeatable and based on reliable data and information).
2. Deployment refers to the extent to which the approach is applied in addressing require- ments relevant and important to the organiza- tion, applied consistently and used by all appropriate work units.

### 2006 Categories and Items, Healthcare Criteria, Arroyo Fresco Scoring Results

**TABLE 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Baldrige categories/subcategories** | **Total points** | **Arroyo Fresco scoring** | **Percentage scored for category of total points** |
| **1. Leadership** | **120** |  | **73** |  | **61%** |
| * Senior leadership
* Governance and social responsibility
 | 7050 | 65%55% |  | 4628 |  |
| **2. Strategic planning** | **85** |  | **49** |  | **57%** |
| * Strategy development
* Strategy deployment
 | 4045 | 60%55% |  | 2425 |  |
| **3. Focus on patient, other customers and markets** | **85** |  | **51** |  | **60%** |
| * Patient, other customer and healthcare market knowledge
* Patient and other customer relationships and satisfaction
 | 4045 | 60%60% |  | 2427 |  |
| 1. **Measurement, analysis and knowledge management**
	* Measurement analysis and review of organizational performance
	* Information and knowledge management
 | **90** |  | **59** |  | **65%** |
| 45 | 60% |  | 27 |  |
| 45 | 70% |  | 32 |  |
| **5. HR focus** | **85** |  | **53** |  | **62%** |
| * Work systems
* Staff learning and motivation
* Staff well-being and satisfaction
 | 352525 | 65%60%60% |  | 231515 |  |
| **6. Process management** | **85** |  | **51** |  | **60%** |
| * Healthcare processes
* Support processes and operational planning
 | 4540 | 65%55% |  | 2922 |  |
| **7. Results** | **450** |  | **250** |  | **55%** |
| * Healthcare and service delivery outcomes
* Patient and other customer focused outcomes
* Financial and market outcomes
* HR outcomes
* Organizational effectiveness outcomes
* Leadership and social responsibility outcomes
 | 1007070707070 | 50%55%55%60%55%60% |  | 503939423942 | 50%55%55%60%55%60% |
| Note: Percentages are rounded. **Total points** | **1,000** | **585** |  |

1. Learning refers to refining the approach through cycles of evaluation and improve- ment, encouraging breakthrough change to the approach through innovation, and shar- ing refinements and innovations with other relevant work units and processes in the organization.
2. Integration refers to the extent to which the approach is aligned with organizational needs identified in other criteria requirements; the extent to which measures, information and

improvement systems are complementary across processes and work units; and the extent to which plans, processes, results, analyses, learning and actions are harmonized across processes and work units to support organizationwide goals.

**Results.** Results refers to the organization’s out- puts and outcomes in achieving the requirements laid out in the first six criteria. The four factors used to evaluate results are:

1. Current level of performance.

# Recent Research

Recent research reveals that 82% of the top 100 publicly traded companies in the United States use Six Sigma.1 But, is it the best practice model for them to use? Should you add lean? What about value stream mapping?

Does the use of Six Sigma, lean or value stream mapping alone or in combination guarantee organi- zational success? Other research suggests it will make you successful if you have the right components in place. One study by Celerant showed that the second most significant problem related to deploying a Six Sigma program was poor project selection.2 (The most significant problem was availability of resources, such as skilled Master Black Belts.)

About 15% of the businesses Celerant surveyed were aware of project selection as an issue and reported a common problem of undertaking inappropriate projects. Celerant suggests quadrupling that percentage and assuming 60% of organizations are currently not selecting the projects that would ben- efit their businesses most.

To respond to the poor selection of projects, Celerant recommends projects be directly linked to the company strategy and concentrate on maintaining value chain focus. As a next step, Celerant recommends the use of an effective assessment method to evaluate the feasibility and value of

projects in support of launching the most worthwhile projects. Celerant called this the Six Sigma “pre- DMAIC” step.

About 48% of respondents to a survey sponsored by Leap Technologies listed improper project scope at outset as one of the three key factors causing Six Sigma projects to fall short of expectations.3 (The other two factors were lack of sustained executive sponsorship and commitment, and lack of buy- in, cooperation and ownership by frontline managers and employees)*—J.W.*

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* 1. Michael Cyger, “The Last Word—Riding the Bandwagon,” *iSixSigma Magazine*, November/December 2006.
	2. “The Outlook for Six Sigma Looks Bright,” Celerant, December 2004.
	3. William Kowalski, “What Keeps Six Sigma Practitioners Up at Night?” [www.isixsigma.com,](http://www.isixsigma.com/) 2003.

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1. Rate (slope of trend data) and breadth of the performance improvements (how widely deployed and shared).
2. Performance relative to appropriate compar- isons and benchmarks.
3. Linkage of results measures (often through segmentation) to important customer, product and service, market, process and action plan performance requirements identified in the applicant’s organizational profile and work processes.

Process and results are critical to evaluation and feedback. However, another critical consideration in evaluation and feedback is the importance of the reported process and results to the organization’s key business factors.

But designers of the Baldrige program also real- ized that all quantitative scoring systems need to be managed under the qualitative guidance of peo- ple skilled in organizational excellence principles. The human element brings in the required synthe- sis, alignment and integration required to make the Baldrige model effective for its intended purpose: to show an organization where it is doing well and where there are opportunities for improvement based on the Baldrige criteria.

James Evans and Kenneth Pipke say Six Sigma contributes to nearly 80% of the score points avail- able in a Baldrige assessment.4 Although they cite no formal studies, they noted many organizations, including Texas Instruments, Motorola, Compaq, Solectron and Boeing, that have successfully com- bined the Baldrige criteria and Six Sigma.

### **Case Study Approach To Project Selection**

The 2006 examiner training case study materials developed by the Baldrige National Quality Pro- gram office5 will now be used to illustrate how to use the Baldrige model to select Six Sigma and lean projects.

In the case study materials, the goal is to identify projects that will best align with the strategic needs of the organization, its customers and other key stakeholders.

As used in this training, the hypothetical Baldrige Arroyo Fresco case study describes a fictitious non- profit organization in the healthcare sector. Arroyo Fresco’s mission is to provide high quality health- care that is responsive to the community’s diverse

cultural and socioeconomic needs, regardless of people’s ability to pay.

Since its founding in 1968, Arroyo Fresco Com- munity Health Center has expanded from one clin- ic in a converted gas station to 11 service sites that include eight medical and dental clinics, a wom- en’s health center and two school based clinics.

Arroyo Fresco also operates two medical service vans and two dental service vans.

After merging with another community health center in 1990, Arroyo Fresco extended its service area to cover three counties of western Arizona— Yuma, Mohave and La Paz. The service area spans more than 23,000 square miles, bordering Mexico at Yuma County, and has a population of 400,000, about one-third of the state’s overall population.

In 2005, Arroyo Fresco’s 379 staff members and 250 volunteers served a diverse population of 59,425 patients, amounting to a 17% market share in its three-county service area.

A key strategic challenge for Arroyo Fresco is balancing its mission to serve patients who cannot pay against tight fiscal conditions that include an increasing percentage of uninsured patients, no growth in federal payments for uninsured patients, and cutbacks in state Medicaid eligibility.

Arroyo Fresco also identifies the following key strategic challenges: addressing workforce gaps, particularly the need for clinical providers and staff with specific technical skills; addressing the low incidence of prevention and screening and the higher incidence of disease in its service area; providing specialty care and meeting uninsured patients’ needs; recruiting and retaining staff; and

enhancing relationships with patients, the commu- nity and external partners.6

### **Scorebook and Feedback Report**

This hypothetical Baldrige application scored 585 out of 1,000 points (see Table 2, p. 35), indicat- ing the following:

* The organization demonstrates effective, sys- tematic, well-deployed approaches that are responsive to the overall requirements of the criteria items.
* The organization demonstrates a fact based, systematic evaluation and improvement process and organizational learning. These factors improve effectiveness and efficiency of key processes.
	+ Results address most requirements of key customer/stakeholder, markets and processes and demonstrate areas of strength against rel- evant comparisons and benchmarks.
	+ Improvement trends and good performance are reported for most areas of importance to the organization’s key requirements.

Note that the detailed scoring results shown in Table 2 would not be provided to actual applicants under the Baldrige program. Only the examiner team sees these scores. However, scoring results would be available if the organization were com- pleting an internal self-assessment and using the Baldrige scoring process as part of that assessment.

To identify potential projects that could use both lean and Six Sigma, the scoring results, such as those in Table 2, could be reviewed to identify the one cat-

egory or subcategory showing the greatest opportu- nity for improvement. Review of the hypothetical feedback report shows four categories with the low- est percentage scores in the running: results (55%); strategic planning (57%); focus on patients, other customers and markets (60%); and process manage- ment (60%).

Once identified in this manner, a review of the Arroyo Fresco consensus feedback report and a compilation of individual examiner scorebooks pro- vides specific examples for improvement, such as:

* **Healthcare and service delivery outcomes:** “There is an absence of measures related to some of the requirements identified as patient and other customer requirements in the pro- vided chart. For example, although many measures for participation in screening and

### Steps Toward Mature, High Performance Processes

**FIGURE 2**

* 1. Reacting to Problems 2. Early systematic approaches

Strategic and operational

goals

Strategic and operational

goals

Operations are characterized by activities rather than by processes, and they are largely responsive to immediate needs

or problems. Goals are poorly defined.

The organization is at the beginning stages of conducting operations by processes with repeatability, evaluation and improvement, and some early coordination among organ- izational units. Strategy and quantitative goals are being defined.

3. Aligned approaches 4. Integrated approaches

Strategic and operational

goals

Strategic and operational

goals

Operations are characterized by processes that are repeatable and regularly evaluated for improvement, with learnings shared and with coordination among organizational units. Processes address key strategies and goals of the organization.

Operations are characterized by processes that are repeatable and regularly evaluated for change and improvement in collaboration with other affected units. Efficiencies across units are sought and achieved through anal- ysis, innovation and sharing. Processes and measures track progress on key strategic and operational goals.

# Sample of Feedback Report Key Themes

**The most significant opportunities, concerns or vulnerabilities are:**

* While Arroyo Fresco states that agility is achieved through senior leaders working other staff members’ jobs once per quarter and that the clinical excellence section of the financial perfor- mance, organizational learning, clinical excellence, utilization and satisfaction framework address- es the organization’s ability to adapt to rapid changes in the clinical environment, it is not evident how these actions create a systematic approach to ensure that the organization is capable of rapid change and flexibility.

Further, it is not clear how Arroyo Fresco’s clinical microsystems, the plan-do-check-act cycle and Arroyo Fresco’s process improvement models ensure the systematic integration of agility into its work systems or the design and improvement of its key processes. Arroyo Fresco might find it dif- ficult to determine how its business and support process designs incorporate new technology and other effectiveness and efficiency factors.

* Although Arroyo Fresco focuses on several key strategic challenges through its strategic planning process, action plan deployment and performance reviews, there is little evidence of approaches to address other key challenges, success factors, changes and customer/market segments.

These approaches include identifying additional sources of revenue, competing for key staff and meeting the unique needs of certain populations (for example, Native Americans, veterans and patients from all income strata). Without systematic approaches to articulate and address all the important factors, challenges and segments described in the organizational profile, it might be dif- ficult for Arroyo Fresco to ensure that it creates and balances value for all patients, customers, and stakeholders.

**Considering Arroyo’s key business/organization factors, the most significant strengths, opportuni- ties, vulnerabilities and gaps (related to data, comparisons and linkages) found in its response to results items are:**

* Results in some areas of importance to Arroyo’s strategy and requirements that are identified in the organizational profile are not provided. These include results associated with patient/customer- perceived value, such as loyalty and retention, and building relationships.

Results also are lacking for work system performance and effectiveness, specifically budget, cost control, and productivity and efficiency measures for key healthcare, business and support processes. Results for supplier and partner performance for key healthcare processes and other key processes are not given.

Source: Baldrige National Quality Program, “Arroyo Fresco Community Health Center Feedback Report,” National Institute of Standards and Technology, 2006.

### Potential Six Sigma/Lean Projects for Arroyo Fresco

**TABLE 3**

|  |  |  |  |
| --- | --- | --- | --- |
| **Feedback report key theme reference** | **Baldrige criteria referenced** | **Project execution method** | **Project objective** |
| There is lack of evidence showing how noted actions create a system- atic approach to ensure the organi- zation is capable of rapid change and flexibility. | Measurement, analy- sis and review of or- ganizational perform- ance. | Six Sigma design for Six Sigma (DFSS) and define, measure, analyze, design and verify (DMADV), lean and value stream map- ping. | Develop and implement a process that addresses rapid changes and ensures flexibili- ty in responding to rapid or unexpected orga- nizational or external changes. Institute and monitor process performance measures for this process. |
| There is lack of clarity regarding how process improvement models ensure systematic integration of agility into work systems or the design and improvement of key processes. | Work systems and healthcare processes. | Six Sigma define, mea- sure, analyze, improve and control (DMAIC), lean and value stream map- ping. | Evaluate the current process improvement models and assess whether they ensure sys- tematic integration of agility into work systems and the design and improvement of key processes. If necessary, update these improvement models to respond to any gaps and implement the updated process. |
| There is little evidence of approach- es to address other key challenges, success factors, changes and cus- tomer/market segments. | Strategy development. | Six Sigma DFSS and DMADV. | Develop and implement a process (or expand the scope of a current process) to address other key challenges, success factors, changes and customer/market segments.Institute process performance measures for this process and monitor same. |
| There is lack of results associated with patient/customer perceived value and building relationships. | Patient and other cus- tomer-focused outcomes. | Six Sigma DFSS and DMADV. | Develop and implement a process perfor- mance measurement system for identified measures. |
| There is lack of results associated with work system performance and effectiveness. | Human resource out- comes. | Six Sigma DFSS and DMADV. | Develop and implement a process perfor- mance measurement system for identified measures. |
| There is lack of results for supplier and partner performance for key healthcare processes and other key processes. | Organizational effec- tiveness outcomes. | Six Sigma DFSS and DMADV. | Develop and implement a process perfor- mance measurement system for identified measures. |

healthcare delivery processes are presented with favorable results, no results are presented related to patient safety or functional status.”

* + **Strategy development:** “Although the appli- cant presents its key strategic objectives and their related strategic challenges in Arroyo Fresco’s strategic objectives listing, it is not clear how the objectives actually address the strategic challenges identified in its organiza- tional profile. For example, it is not clear how

the applicant’s strategic objectives address the financial performance strategic challenge of finding new revenue sources.”

Examiners then review all the subcategory score- book entries, including the identified opportunities for improvement and then, through a highly inter- active discussion, arrive at prioritized statements for the key themes section of the feedback report.

This prioritized feedback, shown in “Sample of Feedback Report Key Themes” (p. 39), reflects a

top-down, systems view of the assessment process that, in practice, has been proven to be very valu- able in helping organizations prioritize improve- ment actions using Six Sigma and lean methods.

A review of the feedback also shows how the Baldrige model framework focuses on high-per- formance, mature processes, as shown in Figure 2 (p. 38). The model is based on the principle that such processes lead to best-in-class organizational results.

Looking across this feedback in conjunction with the scoring guidelines, an organization will be bet- ter prepared to determine its current state com- pared with the Baldrige model and what the gap might be in the development and ongoing manage- ment of all of its processes, both value added and support.

For example, is the organization at step one (reacting to problems) or step three (using aligned approaches)? This suggests a more important ques- tion for any organization: Where do you want to be and what do your customers and other key stake- holders expect to see from your organization, espe- cially when compared with your competitors?

### **Identifying Projects**

A review of the opportunities for improvement from the key themes section of Arroyo Fresco’s feed- back report suggests the potential improvement projects detailed in Table 3.

If the organization determines these suggested projects should be executed using Six Sigma and lean methods, the organization could then proceed forward. A 2004 *QP* article provides some best prac- tice guidance on how to scope projects combining lean and Six Sigma.7

E. David Spong, chairman of the Baldrige Foundation, ASQ treasurer and retired president of Boeing Aerospace Support, recently said, “In the absence of a top-down, systems assessment of the organization against a model like the Baldrige, most organizations are unknowingly using a very common improvement strategy, a ‘random acts of improvement’ strategy.”

So, will Baldrige help drive excellence in orga- nizations’ Six Sigma and lean project selection process? The Arroyo Fresco case example clearly shows that it can.

In the absence of a top-down, best practice sys-

tems model, an organization is more apt to select the wrong projects for execution—something no organization can afford to do.

If an organization is using process improvement methods such as lean and Six Sigma on the wrong projects, it will not be improving the right things. Its survival could indeed be in question.

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