World-Class Quality

Using Baldrige Performance Criteria to Strengthen CMMI® Measurable Results

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Presentation Objectives

Present a brief overview of Baldrige, and the Baldrige Performance Criteria.

Map the Baldrige Performance Criteria to the CMMI process areas (high-level mapping).

Summarize Strengths and Weaknesses of Baldrige and CMMI.

Describe how Baldrige can strengthen CMMI Results.

Answer any questions.

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Outline

Introduction

Baldrige Overview

Mapping Baldrige to CMMI

CMMI Strengths and Weaknesses

Baldrige Strengths and Weaknesses

Summary

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The Quality Crisis

<u>The cost of poor quality:</u>

- **"In most companies the costs of poor quality run at 20 to 40 percent... In other words, about 20 to 40 percent of the companies' efforts are spent in redoing things that went wrong because of poor quality" (*Juran on Planning for Quality*, 1988, pg. 1)**

- **Crosby's Quality Management Maturity Grid states that if an organization doesn't know it's cost of quality, it's probably at least 20%. (Crosby, *Quality is Free*, 1979, pg. 38-39)**

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Lean Approaches

Most organizations have too much waste (e.g., non-value added).

Most processes have too many "non-value added" steps.

How can organizations focus on "value added" and remove waste?

Lean is a recent quality approach to help organizations focus on "value" and remove "non-value".

LSI focuses on lean Baldrige and CMMI.

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What is Lean?

Lean has its roots in quality and manufacturing, and is a recent popular movement in quality.

"Lean Production" is the name for the Toyota Lean Production System.

The following are major lean references (see references in back of presentation for full references):

- "The Machine That Changed The World"
- "Learning to See"
- "The Toyota Way"
- "The Toyota Product Development System"
- "Lean Thinking"

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Some Lean Principles - (1)

Establish customer defined value (i.e., identify the “value stream”). Process = “value”.

Continuously eliminate non-value added activities (e.g., waste, rework, defects).

Use leadership and standardization to create a lean culture.

Align your organization through visual communication.

Create an optimized process flow (e.g., “Flow”, “Pull”, “Just-In-Time”, “Leveled”).

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Some Lean Principles - (2)

Use lean metrics to manage the value stream.

Front-Load the process for maximum design space.

Build a learning organization to achieve lean and continuous improvement.

Adapt technology to fit your people and processes.

Strive for perfection through continuous improvement.

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Quality Maturity

STAGE	SUMMARY	COQ	BA	DCF	SEI
Prevention	"We know why we have happy customers."	5%	800	20%	5
Wellness	"Quality planning, control, and improvement are routine."	10%	700	40%	4
Progressive Care	"Management commitment and continuous improvement resolve quality problems."	18%	600	60%	3
Intensive Care	"We don't know why we have quality problems, but they hurt."	25%	400	80%	2
Comatose	"What quality problems?"	33%	200	100%	1

- Acronyms are (COQ=Cost of Quality; BA=Baldrige Award; DCF=Dilbert Correlation Factor; SEI=SEI CMMI/CMM)
- Based on "The Eternally Successful Organization", by Crosby, the SEI, the Baldrige Award, & Dilbert Comics

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What Is the Baldrige National Quality Program?

Operates as a public-private partnership

Manages the Malcolm Baldrige National Quality Award (MBNQA)

Provides global leadership in promoting performance excellence

Disseminates information

What Is the History of the Baldrige Program?

The Malcolm Baldrige National Quality Improvement Act of 1987, Public Law 100-107

Created Award Program to

- identify/recognize role model businesses
- establish criteria for evaluating improvement efforts
- disseminate/share best practices

Expanded to health care and education (1998)

Expanded to nonprofit sector (2005)

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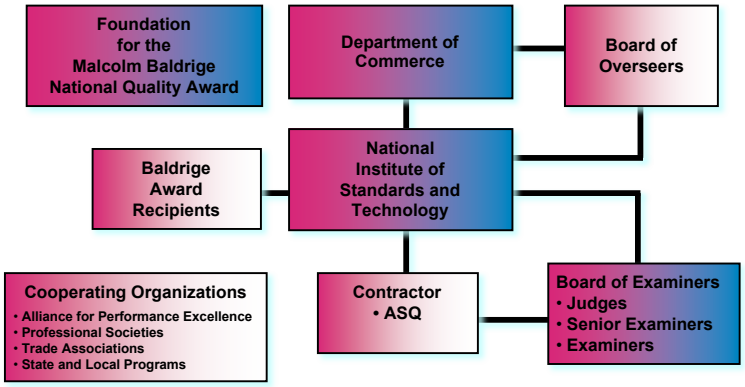
Who Are the Baldrige Partners?



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What Is Performance Excellence?

An integrated approach to organizational performance management that results in

- delivery of ever-improving value to customers and stakeholders, contributing to organizational sustainability;
- improvement of overall organizational effectiveness and capabilities;
- organizational and personal learning.

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What Should I Know About the Baldrige Criteria?

Used to identify Award recipients

Used as an assessment tool

Three versions: Business/Nonprofit, Education, and Health Care

Organizational Profile and seven Categories compose an integrated framework

Updated regularly

What Organizations Can Apply for the Baldrige Award?

Manufacturing

Service

Small business (manufacturing or service)

Education

Health care

Nonprofit, including government agencies

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Seven Categories of the Business/Nonprofit Criteria

1. Leadership
2. Strategic Planning
3. Customer and Market Focus
4. Measurement, Analysis, and Knowledge Management
5. Workforce Focus
6. Process Management
7. Results

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Core Values and Concepts

Visionary Leadership
Customer-Driven Excellence
Organizational and Personal Learning
Valuing Workforce Members and Partners
Agility
Focus on the Future
Managing for Innovation
Management by Fact
Social Responsibility
Focus on Results and Creating Value
Systems Perspective

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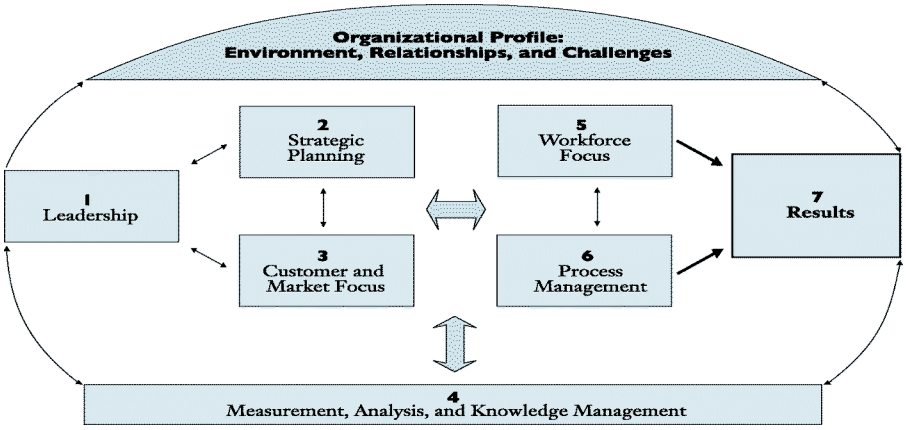
Baldrige Criteria Framework: A Systems Perspective



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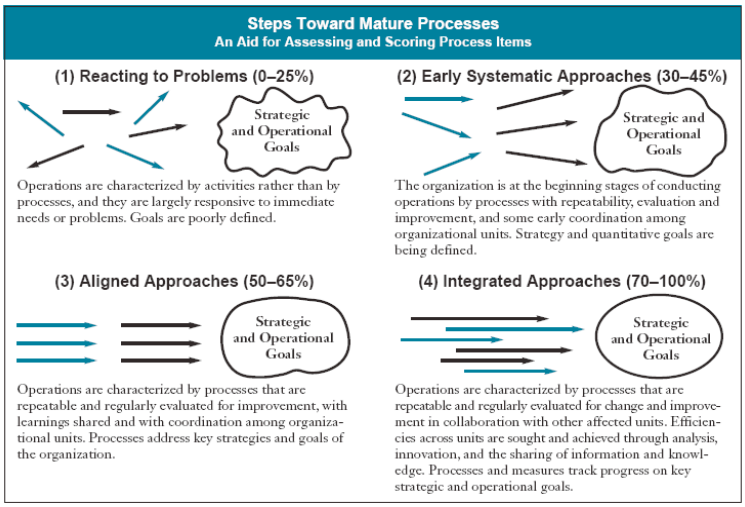
Steps Toward Mature Processes



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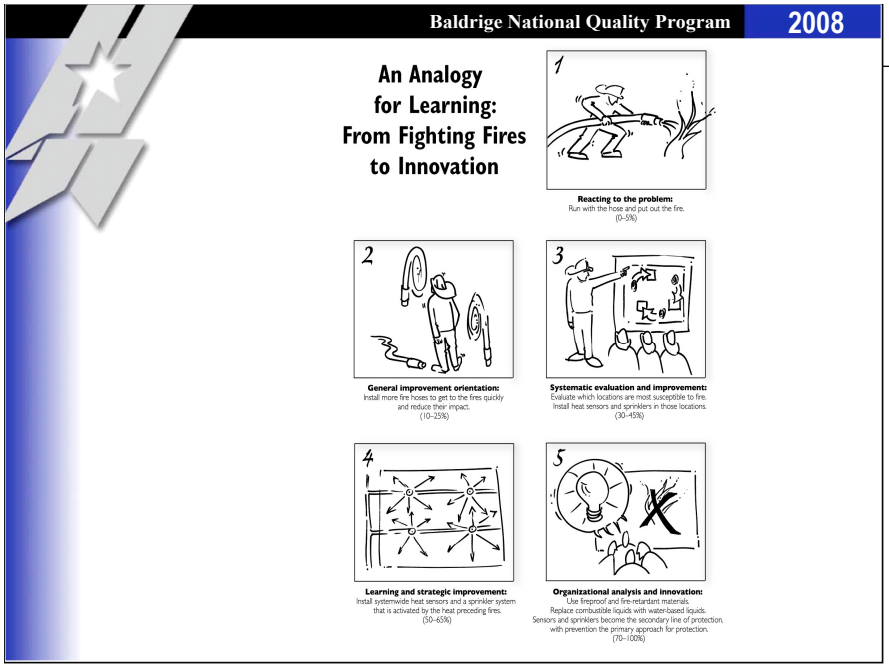

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Baldrige Category Point Values

1	Leadership	120
2	Strategic Planning	85
3	Customer and Market Focus	85
4	Measurement, Analysis, and Knowledge Management	90
5	Workforce Focus	85
6	Process Management	85
7	Results	450
	TOTAL POINTS	1,000

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1. Leadership (120 pts.)

Addresses Senior Leaders' Roles, Governance, and Citizenship

1.1 Senior Leadership (70 pts.)

1.2 Governance and Social Responsibilities (50 pts.)

<u>Mapping</u>: Mapping to CMMI is weak here. GP 2.10 "Review Status with Higher Level Management", GP 2.1 "Establish an Organizational Policy", and "Commitments" don't measure up to Baldrige. CMMI leadership is more implied.

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2. Strategic Planning (85 pts.)

Addresses Strategic and Action Planning and Deployment of Plans

2.1 Strategy Development (40 pts.)

2.2 Strategy Deployment (45 pts.)

<u>Mapping</u>: Mapping to CMMI is also weak here. OPF refers to "Process Action Plans". MA refers to aligning with plans. "Organizational Plans" are referred to in Process PAs (OT SP 1.1). Strategic planning is a CMMI weakness.

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3.Customer and Market Focus: 85 pts.

Addresses How an Organization Seeks Knowledge, Satisfaction, and Loyalty of Customers

3.1 Customer and Market Knowledge (40 pts.)

3.2 Customer Relationships and Satisfaction (45 pts.)

<u>Mapping</u>: Mapping to CMMI is extremely weak here. RD SG 1 refers to "Customer Requirements".

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4. Measurement, Analysis, and Knowledge Management (90 pts.)

Addresses Analysis, Review, and Improvement of Organizational Performance and Management of Data, Knowledge, and Information Resources

4.1 Measurement, Analysis, and Improvement of Organizational Performance (45 pts.)

4.2 Management of Information, Information Technology, and Knowledge (45 pts.)

Mapping: CMMI does well here. MA, QPM, OPP, GP 2.8, GP 4.1, and GP 4.2 cover basic to advanced measurement.

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5. Workforce Focus (85 pts.)

Addresses How an Organization Engages, Develops, and Manages Its Workforce and Builds an Effective Workforce Environment

5.1 Workforce Engagement (45 pts.)

5.2 Workforce Environment (40 pts.)

Mapping: CMMI does address OT, GP 2.5 "Train People", "Institutionalization" - All GP's, etc. CMMI is weak here compared to Baldrige.

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6. Process Management (85 pts.)

Addresses How an Organization Designs Its Work Systems, Prepares for Emergencies, and Manages and Improves Its Work Processes

6.1 Work Systems Design (35 pts.)

6.2 Work Process Management and Improvement (50 pts.)

<u>Mapping</u>: CMMI does very well here. OPD, OPF, IPM, GP 3.1, GP 3.2, are far more advanced than Baldrige (e.g., PAL, Tailoring, OSSP, PDP, etc).

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7. Results (450 pts.)

Addresses an Organization's Performance and Improvement in Key Areas and Includes Current Performance Levels, Trends, and Comparative Data

7.1 Product and Service Outcomes (100 pts.)

7.2 Customer-Focused Outcomes (70 pts.)

7.3 Financial and Market Outcomes (70 pts.)

7.4 Workforce-Focused Outcomes (70 pts.)

7.5 Process Effectiveness Outcomes (70 pts.)

7.6 Leadership Outcomes (70 pts.)

<u>Mapping</u>: CMMI is weak here. Measurable results are implicit and assumed.

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Baldrige Measurable Results

"LeTCI" is a concept where the CMMI could be greatly strengthened.

Levels: "Levels" refers to numerical information that places or positions an organization's results and performance on a meaningful measurement scale. Performance levels permit evaluation relative to past performance, projections, goals, and appropriate comparisons. "Good" and "Bad" directions should be labeled.

Trends: "Trends" refers to numerical information that shows the direction and rate (slope of trend data) and breadth (how widely deployed and shared) of performance improvements. A minimum of three data points generally is needed to begin to ascertain a trend. More data points are needed to define a statistically valid trend.

Comparisons: "Comparisons" refers to establishing the value of results by their relationship to similar or equivalent measures. Comparison can be made to results of competitors, industry averages, or best-in-class organizations. The maturity of the organization should help determine what comparisons are most relevant.

Integration: "Integration" is a scoring factor for both process items and results items (see next page).

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Implementation

"ADLI" is a similar concept to CMMI Generic Practices.

Approach: "Approach" refers to the methods used by an organization to address the Baldrige Criteria Item requirements in Categories 1–6.

Deployment: "Deployment" refers to the extent to which an approach is applied in addressing the requirements of a Baldrige Criteria Item.

Learning: "Learning" refers to new knowledge or skills acquired through evaluation, study, experience, and innovation. Learning should be embedded in the way an organization operates.

Integration: "Integration" refers to the harmonization of plans, processes, information, resource decisions, actions, results, and analyses to support key organization-wide goals. Effective integration goes beyond alignment and is achieved when the individual components of a performance management system operate as a fully interconnected unit.

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Baldrige Weaknesses vs. CMMI

Engineering (Baldrige is too general).

Baldrige has criteria, but not as strong as CMMI PAs:

- Project Management (PP, PMC, IPM)
- Supplier Agreement Management (not as strong)
- Configuration Management
- Risk Management
- Decision Analysis and Resolutions

CMMI has Advanced Process Definition and Tailoring (e.g., OPD, IPM). Baldrige is weak here.

Baldrige has more informal maturity (score vs. levels).

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CMMI Strengths & Weaknesses

Strengths:

- Has become an industry standard
- Based on industry best practices
- Based on maturity and capability models
- Has a industry standard appraisal method

Weaknesses

- Measurable results are not required (way too much focus on "levels" and "ratings", and not enough on measurable results)
- Leadership requirements are weak
- CMMI model is not lean (too large)
- SCAMPI is especially not lean (takes too much time and is too expensive)

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Baldrige Strengths & Weaknesses

Strengths:

- Based on measurable results (450/1000 points)
- Has become an industry standard (State Awards are also based on Baldrige)
- Based on performance criteria (best practices)
- Has a industry standard assessment method
- Award winners are "model organizations"
- Cost effective to receive valuable feedback

Weaknesses

- Does not address engineering strongly
- Does not address maturity/capability levels
- Run by mostly by "volunteers"
- 80% of organizations do not receive site visits

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Summary

Baldrige and CMMI could help each other improve.

<u>Bottom Lines:</u>

CMMI needs to be based more on attaining measurable results. CMMI and SCAMPI also need to be leaner.

Baldrige needs to strengthen criteria for engineering organizations (e.g., engineering best practices). The U.S. needs to invest more money into Baldrige and into quality.

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Resources for More Baldrige Information

Most Baldrige National Quality Program (BNQP) documents are available both in printed form and on the BNQP Web site.

To obtain these documents, call (301) 975-2036 or visit www.baldrige.nist.gov.

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Apply to Serve as a Baldrige Examiner

Evaluate Award applicants using the Criteria for Performance Excellence.

Earn professional development CEUs (accredited by IACET).

Network with other senior-level professionals from all sectors.

Learn how organizations improve processes and get world-class results.

Attend the annual Award Ceremony given by the President of the United States.

Apply November 5 - January 6 at www.baldrige.nist.gov or call 877-237-9064.

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