

The Baldrige framework is used extensively as a foundation for internal systems, but there has been a substantial decrease in the number of manufacturing organizations applying for the award. This research study validates some of the reasons associated with that development.

The Value of Using the Baldrige Performance Excellence Framework in Manufacturing Organizations

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The Baldrige Performance Excellence program website introduces this well-accepted framework, which is used by many organizations as a foundation for their quality management systems (QMS) by stating, “Organizations everywhere are looking for ways to effectively and efficiently meet their missions and achieve their visions.”¹ The Baldrige program was initiated when U.S. leaders realized that American companies needed to focus on quality in order to compete in an ever-expanding and demanding global market. In 1987, Congress enacted the sponsoring legislation, naming the award after the former Secretary of Commerce Malcolm Baldrige, who had advocated quality management as a key to U.S. prosperity and sustainability. Three primary objectives originally were envisioned—to identify and recognize

role-model businesses, establish criteria for evaluating improvement efforts, and disseminate and share best practices.

Since then, the National Institute for Standards and Technology (NIST) has overseen the program, with ASQ and other quality-related organizations assisting in the process. Thus far, 1,639 organizations have applied for the Baldrige Award, and 102 have been recognized as winners.² The program’s criteria, which undergoes a rigorous continuous improvement process each year, has been used as a benchmark for many other countries’ quality award programs, as well as those developed by states, local communities, specific organizations’ internal programs, etc.

The framework associated with the Baldrige program is based on a set of core values and concepts that are applicable to organizations of all types, sizes,



locations, etc. The overall performance systems of seven categories are delineated in the detailed criteria. The online supplemental article, "Learning More About the Baldrige Criteria," provides a summary of the 2015–16 framework, which has versions for business/nonprofit, education, and healthcare.

This article explores the decreased involvement of manufacturing organizations in the use of the Baldrige framework. The results of a survey conducted among key stakeholders familiar with this industry provides some insights regarding this decline, and some proposed approaches for changing this pattern are presented.

General Effectiveness of the Baldrige Excellence Framework

Based on the widespread use of this framework, there is ample anecdotal evidence of its acknowledgment as a reliable basis for organizations' internal systems. A substantial number of research studies are also available, however, and they support the efficacy of the Baldrige process. Here are just a few of those documented results.

- Link and Scott studied 273 applicants from 1997 to 2010, comparing the benefits they received to the cost of operating the program. The results were a ratio of 820 to 1, and that value did not take into account the benefits associated with use of the framework across the entire U.S. economy.³
- Historical studies have demonstrated a positive relationship between quality improvement and financial or market-share performance. For instance, **Hendricks and Singhal** reported increases in sales growth of 69 percent for the quality award winners compared to 32 percent for the control group, total assets of 79 percent compared to 37 percent, operating income of 91 percent compared to 43 percent, and return on assets of 9 percent compared to 6 percent.⁴
- Furthermore, Krueger and Wrolstad state that, "Winning the MBNQA is well-publicized evidence of successful efforts taken to enhance the quality of the management processes within the recipient firm. Share price performance of MBNQA winners rises after award announcement. In fact, in over half of the observed portfolios studied, significant raw or risk-adjusted market excess returns were present. Therefore, it appears as though investors positively reacted to the superior managerial skills and efforts of the MBNQA winners ... the Baldrige portfolio outperformed the S&P 500

with risk-adjusted monthly returns of 0.71 versus 0.56 for the S&P 500 Index."⁵

Baldrige Applications From Manufacturing Firms

Over time, the number of applications from the manufacturing sector has gone down substantially. In 1988, the initial year of the program, 45 applications were received from manufacturing organizations. In 2010 there were only three, and in 2012 two applications were submitted. In 2015, there were eight organizations in the healthcare category, two nonprofits, one small business, and one educational organization.

Although systematic research to determine the causes of this issue is not currently available, the following anecdotal information was gathered as a precursor to conducting the survey. Many of these proposed causes have been discussed—or even debated—in articles and on several online forums.

- The time and cost required to apply for the Baldrige Award is more than the typical manufacturing company can afford to invest given other competing priorities. The return on investment is insufficient for the benefits the company attains. For example, one blogger noted, "A typical manufacturer always gives the excuse, 'I don't have time for this ...'"⁶
- Manufacturing organizations perceive that the process is too difficult. "The problem, and I hate to say this, is that manufacturing is totally against Baldrige because it is too hard. Manufacturing has given up."⁷
- Some critics believe there are issues with the Baldrige framework and process, including the criteria that is too generic, insufficient transparency, the application document being too limiting for the examiners to make a reasonable assessment, and a gap existing between the output of the site visit teams and the judging process.⁸
- There are many other alternative options that a manufacturing company can use as the basis for its quality system, such as ISO 9001. Furthermore, the prevalent use of Lean Six Sigma methods reduces the need for a framework that is as comprehensive and complex as Baldrige.
- The feedback provided to applicants does not provide prescriptive enough suggestions to guide improvement efforts.⁹
- Winning organizations still have their weaknesses and challenges to address. Being recognized with a Baldrige Award does not guarantee that a company's products/services are superior.¹⁰

It is worth noting one other potential cause of the decline in manufacturing applications. It is not necessary to apply for the Baldrige Award to benefit from the framework. Many organizations choose to rely on self-assessment, state or local award programs' evaluations, or third-party reviews. Although these approaches do not provide the same type of feedback that is associated with the formal Baldrige application process, it still has great value in most cases. Given the amount of readily available information on previous manufacturing applicants' experiences, manufacturing companies that have the previously mentioned concerns may decide that these alternatives will suit their objectives and resource constraints better.

Study Design and Key Findings

In September 2015, a survey was launched to gain insights on the reasons for reduced Baldrige applications from the manufacturing sector. The target respondents involved key Baldrige stakeholders—business

owners, managers, examiners, and consultants. The questionnaire was made available through multiple online communities including LinkedIn®, and a total of 94 responses were obtained.

The survey contained nine Likert-based scalar questions aligned with the anecdotal suppositions regarding the declining application rate, and three open-ended questions that were intended to explore the issues more deeply. The responses to these questions were categorized into themes to identify patterns. The actual survey instrument, response counts and graphs of the proportions for the scalar questions, and summaries of the responses to the open-ended questions are available in the supplemental article, "Manufacturing Sector Research Results Regarding Declining Baldrige Application Rates."

Table 1 shows the percent of responses associated with each scalar rating for the first battery of questions. Table 2 provides a high-level analysis of those results. It shows the sum of the "strongly disagree" and "disagree" ratings (bottom-two scalar ratings)

Table 1: Results for Scalar Data

Scalar question	Percent of responses				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Many manufacturing organizations use the Baldrige Excellence framework.	9.7%	32.3%	30.1%	23.7%	4.3%
Self-assessment is more than enough to understand and close the gap. Assessment by independent examiners via the Baldrige process is of little value.	37%	45.7%	6.5%	9.8%	1.1%
The significant return on investment proven by numerous studies isn't enough for manufacturing to apply for the Baldrige Award.	5.4%	15.2%	29.3%	40.2%	9.8%
The award is not motivating enough for manufacturing organizations to apply.	3.3%	12.1%	15.4%	50.5%	18.7%
Winning the award does not change the market perceptions of product/service quality enough to warrant submitting an application.	8.8%	18.7%	12.1%	44%	16.5%
The manufacturing sector thinks that applying for and achieving the Baldrige Award is too difficult, so its firms no longer apply.	3.3%	15.2%	22.8%	47.8%	10.9%
The Baldrige process results in bureaucracy and eats up management time and financial resources without adding value.	23.1%	29.7%	16.5%	25.3%	5.5%
The development of alternative avenues to quality improvement and cost effectiveness, such as Six Sigma and lean management, has diverted the attention from Baldrige even though Baldrige supports such initiatives.	1.1%	14.3%	9.9%	47.3%	27.5%
Manufacturers are subjected continually to various audits such as ISO 9001/ISO 14000, SA 8000, OHSAS 18000, and ISO 27000 as a customer requirement and thus suffer from assessment fatigue.	1.1%	7.6%	18.5%	58.7%	14.1%

compared to the sum of the “strongly agree” and “agree” ratings (top-two scalar ratings). Because the sample size was fairly small and the stakeholders represented a quite diverse mix of potential perspectives, statistical analyses of these results were not conducted; however, a qualitative test was used to determine when a notable difference had emerged. Table 2 shows these results.

Respondents reported a disproportionately high level of agreement with the following six scalar questions of potential causes that had been postulated, and many of the categorical themes supported these findings. These results are listed in order of the ratios of their top-two scalar ratings compared to the bottom-two scalar ratings.

- Assessment fatigue had the most disparate difference with a ratio of 8.4, indicating that it is perceived as the most notable contributor to the decline in applications from manufacturing organizations.
- Two of the factors had fairly similar ratios that were quite large but were much lower than the

previous influence. The first one involved the use of alternative quality improvement approaches, which had a ratio of 4.9.

- With a similar ratio of 4.5, respondents made it clear that the Baldrige Award does not stimulate the interest of the manufacturing sector sufficiently.
- Concerns regarding the difficulty associated with applying for the award was ranked the fourth highest with a ratio of 3.2.
- The two final factors had a disparity ratio of at least 2. The first indicated that the information available documenting the return on investment achieved by Baldrige Award winners isn’t compelling enough (ratio of 2.4).
- Furthermore, respondents perceive that winning the award does not have a substantial enough benefit to warrant the effort required (ratio of 2.2).

One of the scalar questions had a notable negative ratio—one where the disagreement was much higher than the agreement. In this case, a ratio of 7.6 confirmed that the stakeholders

Table 2: Comparisons for Scalar Data

Scalar question	Total percent bottom-two scalar ratings	Total percent top-two scalar ratings	Notable difference?
Many manufacturing organizations use the Baldrige Excellence framework.	42%	28%	
Self-assessment is more than enough to understand and close the gap. Assessment by independent examiners via the Baldrige process is of little value.	82.7%	10.9%	Yes, disagreement is notable
The significant return on investment proven by numerous studies isn’t enough for manufacturing to apply for the Baldrige Award.	20.6%	50%	Yes, agreement is notable
The award is not motivating enough for manufacturing organizations to apply.	15.4%	69.2%	Yes, agreement is notable
Winning the award does not change the market perceptions of product/service quality enough to warrant submitting an application.	27.5%	60.5%	Yes, agreement is notable
The manufacturing sector thinks that applying for and achieving the Baldrige Award is too difficult, so its firms no longer apply.	18.5%	58.7%	Yes, agreement is notable
The Baldrige process results in bureaucracy and eats up management time and financial resources without adding value.	52.8%	30.8%	Yes, agreement is notable
The development of alternative avenues to quality improvement and cost effectiveness, such as Six Sigma and lean management, has diverted the attention from Baldrige even though Baldrige supports such initiatives.	15.4%	74.8%	
Manufacturers are subjected continually to various audits such as ISO 9001/ISO 14000, SA 8000, OHSAS 18000, and ISO 27000 as a customer requirement and thus suffer from assessment fatigue.	8.7%	72.8%	Yes, agreement is notable

who participated in the survey do not believe self-assessment is an adequate replacement for submitting an application and obtaining feedback from qualified Baldrige examiners.

Conclusions and Recommendations

Although there is an overwhelming amount of evidence supporting the value of participating in the Baldrige process, including data related to the return on investment, this survey's results indicate that the message is not penetrating the manufacturing sector. It appears that creating an awareness of what the criteria, framework, award, and the national and state programs can offer simply is not convincing this sector. Using improvement methodologies such as Lean Six Sigma fits well within the Baldrige framework and actually contributes to even better results related to return on investments; so these approaches should not be considered replacements but rather as complementary methods.

Based on the application rates associated with the healthcare and education sectors, there seems to be a connection between the availability of specifically focused versions of the Baldrige framework and engagement with the Baldrige process. Working directly with the manufacturing sector to create a version of the criteria specifically focused on manufacturing and its particular needs and issues might be expected to have a positive impact on the current issue. Furthermore, identifying advocates, aligned stakeholders including peer groups, and regulatory authorities could stimulate interest among manufacturing organizations.

These two strategies could be combined to provide a compelling case for manufacturers to invest the time and effort necessary because they would understand the ultimate value of the Baldrige process.

More Online

To learn more about the Baldrige program and review additional detailed results from the survey, go online to www.asq.org/pub/jqp/.

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