

**THE IMPACT OF BALDRIGE ON CORPORATE  
FINANCIAL & NON-FINANCIAL  
PERFORMANCE**

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## Abstract

After 17 years and 1063 applicants and 59 award recipients the Malcolm Baldrige National Quality Award (MBNQA) has made a national and international impact. However, questions still exist despite almost 2 decades of research, case studies and industry experience of its application in regard to its performance impact. This paper places the answer to those questions in context and relates the results of various large-scale research studies into the impact of MBNQA and explains just how and why MBNQA does indeed have a positive financial and non-financial impact on organizations.

## Introduction

The success of The Malcolm Baldrige National Quality Award (MBNQA) Criteria for Performance Excellence has certainly created debate since it was established in 1987. <sup>1</sup> It was created to stimulate quality and improvement, recognize achievement, establish criteria to be used to evaluate improvement and make available information on award winning companies for others that wish to learn about quality. <sup>2</sup> After 17 years, 1063 applicants, 59 award recipients, training over 2300 examiners, mailing more than 50,000 copies of the criteria and providing over 700,000 downloaded copies per year, and being the inspiration for the creation of 44 state awards and nearly 50 quality award programs internationally (including the European Quality Award) the MBNQA could be considered successful in attaining its goals to date. <sup>3,4</sup>

So what are the questions and debate that linger about MBNQA. While there continue to be those that strongly advocate the MBNQA naturally there are those as with anything else that have their reservations. Some of these relate to the effort that needs to be put into applying for the award and its payback. Before focusing on the MBNQA itself it is worth considering the wider context of quality in which the MBNQA is set. There is ample support of the strategic importance of Quality due to its systems approach, focus on the customer and links to strategic planning and competitive advantage. <sup>5,6,7,8,9</sup> This strategic import has been attained through in part the performance impact of quality.<sup>10,11</sup> Samson and Terziovski <sup>12</sup> in their study of quality management practices and operational performance of 1200 Australian and New Zealand manufacturing companies found that the relationship between TQM practice and performance was significant. The strongest predictors of performance were leadership, management of people and customer focus. It is interesting to note that these predictors represent specific 'approach' criteria within the MBNQA and their correlation to rates of return are supported through the impact of education and employee involvement found other studies <sup>17</sup> where these culture or behavioral issues were found to have had a stronger impact than the use of tools and techniques alone. Evans and Jack <sup>25</sup> in a study in 2003 found that improving such 'approach'

criteria had a significant impact on financial performance measures and that these high performance practices and approaches used in the MBNQA resulted in strong business results. Handfield, Ghosh and Fawcett <sup>27</sup> in a 1998 study of 307 companies in 50 US states also found that quality driven strategies improved financial performance. A UK study of TQM practice by 29 companies over a 5 year period found that compared industry median 76% of the companies studied had better profit margins, 79% of the companies had higher turnover per employee and 79% had higher profit per employee. The differences were a direct result of the introduction of TQM. <sup>13</sup> In a recent Swedish study of its national quality award recipients found a significantly higher return on assets than their competitors and a comparable group. <sup>22</sup> These studies and their results are the reasons why quality has been accepted as a driver for business improvement and why the MBNQA has been implemented and adopted with such vigor.

Despite such studies, experiencing the MBNQA for many years and the significant detailed insights through case studies from Baldrige winners, questions still exist about MBNQA specifically in regard to its the financial impact. Most of the issues that question MBNQA are based on perceptions and are rarely based on objective data and statistically valid analyses. <sup>18</sup> However, often studies that have shown positive performance impact of the MBNQA have had flaws and fueled criticism. For example a General Accounting Office study in 1990 which conducted surveys and interviews with 20 companies which had scored high in the 1988 and 1989 MBNQA process, found that these companies performed well on key metrics including return on assets. A Commerce Department study of MBNQA winners and the comparative returns on investments from 1988-1994 with the S&P 500 showed a return of 188% for the MBNQA winners compared to 28% to the S&P 500. <sup>20,26</sup> However, these studies had either small sample sizes or did not control for variables such as company size, industry effects or risk. This paper helps to clarify the issues and relate the results of empirical research conducted with rigorous methodologies that define the financial and performance impact of the MBNQA.

### MBNQA The Key Issues In Context

As mentioned earlier there have been many studies on the impact of the MBNQA Criteria for Performance Excellence. One of the key problems is the clear dissemination of this research and differentiation of the issues under discussion.

Before discussing the results of various studies it is worth placing MBNQA in context and making several issues clear. Often the discussion about MBNQA does not differentiate between the reasons for its creation, the award process itself, self-assessment and the other resources that MBNQA provides such as the national conferences, support of state, regional or local quality awards, the training, videos, books and other resources that it provides to businesses. Of course none of this takes into consideration the professional development that the rigorous examiner training and experience provides. <sup>14</sup> Not to differentiate between these issues when discussing MBNQA creates fundamental flaws in any argument that transpire. For example the fees associated with applying for the MBNQA and the time and effort preparing for the application and site visits are usually cited as a key financial downside. But it should be remembered that this is not the only form of association with the MBNQA process or criteria. As stated earlier one could simply use the learning materials such as the criteria documents, case studies, PowerPoints and much more for no cost by using the free download materials on

the MBNQA website. Or for some cost one could attend the conferences or attend benchmarking tours of the award winners and so on. If an application is considered to be the ideal way forward, many companies first apply through their state quality awards as a learning process and stepping stone to MBNQA. Many of these are directly based on the MBNQA, such as the Wisconsin Forward Award and provide a highly professional, rigorous award processes. Indeed many state winners have gone on to win the MBNQA, in the case of the Wisconsin Forward Award this has included SSM Health Care and University of Wisconsin Stout.

A key route open to any organization interested in learning about MBNQA is to learn about and conduct self-assessment. Again the MBNQA website provides information on this in addition to an online self-assessment tool. A number of methods of self-assessment using MBNQA exist such as internal applications where corporations write their own applications based on all the MBNQA requirements and train their own internal examiners to run corporate self assessments and award processes. Other methods include conducting, through the National Council for Performance Excellence in association with state quality award organizations, large scale online or hard copy self assessment surveys with detailed reports providing multiple breakdowns of scoring along with detailed comments on strengths and Opportunities for Improvement (O.F.I's). Other methods, which, are cheaper and faster but less detailed, involve using evaluation tables and workshops to gather feedback from teams.,<sup>15, 16</sup>

Having created some context, discussion can now be focused on be on the financial performance related to using the MBNQA either for self-assessment or specifically when applying for the MBNQA itself.

### Studies on the Performance Impact of MBNQA

Many of the issues discussed above play into forming the perceptions, expectations and attitudes of management when deciding to become involved with MBNQA. An exploration of those expectations is important so that the results of MBNQA are benchmarked and relevant.

In many cases managerial expectations with regard to quality and MBNQA are too high especially in regard to financial returns.<sup>17</sup> When unrealistic expectations of MBNQA turning "lead in to gold....a sure bet to reverse poor performance" are made and it cannot "deliver the hoped for results, it is deemed a failure".<sup>18</sup> But of course the MBNQA should not be seen as a "panacea for business, but rather a means with which to build and maintain a strong competitive foundation"<sup>19</sup> and does not provide instant results.<sup>18, 13</sup> However, expectations are indeed high especially for improved financial returns from progressing toward an award application. This is also the top justification for involvement with MBNQA.<sup>17</sup>

In a research study by Davis (2005)<sup>17</sup> of managers from companies pursuing MBNQA the key reasons for justifying this goal was improved cash inflow position, an improved return on investment and growth in market share and customer satisfaction. While the cost of implementation was a lower consideration it was still important to the managers to keep the costs of implementation low, in fact their expectation for this was considered by Davis to have been lower that would be expected or even "reasonable". In regard to the percentage of return required on MBNQA the respondents included a 12% return on investment and 6.5% return on

assets with an increase of cash income and profits of 14% and customer satisfaction increases of 15%.<sup>17</sup> With expectations high across a range of metrics, the results need to be very high not to create disappointment.

Perhaps the best-known study on the financial results of the MBNQA has been the 'Baldrige Index'. This study began in 1995 and compared placing \$1000 in a fictitious stock fund made up of publicly traded MBNQA winners and comparing them to investing \$1000 in the Standard and Poor's 500. Between 1992 and 2002 the Baldrige Index outperformed the S&P 500 by 6.5 to 1. This has been used as significant evidence of the positive financial impact of MBNQA. However, in the last 2 years the Baldrige Index has underperformed the S&P 500 by in some cases -0.71 to 1.<sup>29</sup> This has been seen by many as eliminating the proof of MBNQA's impact on financial performance. However, the dip in performance is not significant and part of the reason for the dip in the comparative performance relates to the fact that a significant component of the Baldrige Index are technology companies and technology stocks have not performed well recently. Also it should be pointed out that the Baldrige Index did not adjust the returns for risk or market movements. It is interesting that with the dip in performance of the Baldrige Index no consideration was given to the fact that as MBNQA approaches its 20 year mark, more and more companies are being influenced by the winners and are implementing similar practices while many others have actually applied for the MBNQA or won or applied for one of the many MBNQA aligned state awards. As this continues the best practices and therefore, the difference in impact will narrow to some degree. This is reflected in Table 1. But this recent dip for many simply continues to add to the argument that MBNQA does not relate to a positive financial impact. But there are other studies that have also found MBNQA providing financial impact.

In a study of 17 Baldrige winners from 1988 to 1996 Tai and Przasnyski<sup>31</sup> compared to the winners to S&P 500 stocks and made adjustments for systematic and unsystematic risk and market movement. This included the variability of stocks total return directly associated with overall movements in general economic activity such as inflation and interest rates and variability unique to individual stocks such as labor strikes and lawsuits. Treynor's index and Jensen's measure were used to consider the impact of such variability. The study showed that the MBNQA winners outperformed the S&P 500 stocks with similar risk.

In 1998 the Q100<sup>30</sup> began, this consisted of 100 of the 500 S&P companies weighted and diversified to align it with the weighting and sectors in the S&P 500. From September 1998 to December 2001 the Q100 returned 26.97% compared with the S&P 500's return of 17.59%. A \$10,000 investment in both indices in 1998 would have grown to \$12,697 for the Q100 compared with \$11,759 for the S&P 500. It was considered that "in both bull and bear markets quality improvement efforts have a direct and measurable impact on performance." (George<sup>30</sup>, 2003, p37) This study is supported by others using different methodologies.

Wisner and Eakins (1994)<sup>19</sup> studied 17 MBNQA winners from 1988-1992 and found that they all showed impressive achievements in customer service cost, production costs, product reliability, defect rate and cycle time reduction. Improvements include increases in sales growth by 75%, employee job satisfaction by 57% and return on assets by 50%. Specific analysis of four of the winners involved a trend analysis of financial performance over time in addition to comparing each company's performance to industry averages. This involved using annual sales, the

average five-year sales growth, the return on sales, return on assets and the return on net worth. Market data included share price per earnings ratio, earnings per share and the five-year average EPS growth. Value Line, S&P and Disclosure were used as financial resources. The results showed financial performance increased by 58%.

Wrolstad and Krueger <sup>32</sup> compared 25 state award (based on MBNQA) winning companies from 1988 to 1996 to companies matched by size and SIC codes. The average changes for key metrics over the four year period showed the award winners with a return on equity of 18.73% compared to the comparison companies of -5.91%, return on assets 10.28% to -5.5%, operating profit margin 46.77% compared to 2.69% and operating margin of 1.12% compared to -1.71. During this time the award winners had a return of 18.1%, the comparison group 16.2% and for the S&P 500 13%.

The Ramasesh <sup>26</sup> study in 1998 focused on 13 publicly traded MBNQA winners from 1988-1996 and used S&P 500 index and the Wall Street Journal Index to track key performance metrics. This study found highly significant returns for the winners of the MBQNA especially in regard to net sales per employee and reduction in inventories.

Hendricks and Singhal (1999) <sup>18</sup> studied 600 winners of different awards. While the study focused on MBNQA winners it also considered the various state awards and those created by large companies based on the MBNQA and used to create a multilevel evaluation process judged by internal or external examiners. The winners were all publicly traded allowing objective historical financial data to be obtained for the 4 years before they won an award (implementation) through to 6 years after they won (post implementation). Benchmark companies were selected to compare the award winners' performance. These benchmarks were in the same industry with similar size in terms of the value of assets. There were no significant differences in any performance criteria during the implementation period between the groups. During the post implementation period growth in operating income averaged 91% for the award winners compared to 43% for the benchmarks while sales increased for the winners by 69% compared to 32% for the benchmarks. Winners also seen total assets increase by 79% (compared to 37%) and return on sales increase by 8% compared to no improvement by the benchmarks. Many believe that larger firms are at an advantage but findings show that small winners outperformed the benchmarks by an average of 63% compared to large winners that outperformed their benchmarks by 22%. While independent (MBNQA and state awards) and supplier award winners were used in the sample, the independent award winners outperformed their controls by an average of 73% compared to supplier award winners that outperformed by 33%. <sup>18</sup>

Jacob, Madu and Tang (2004) <sup>20</sup> conducted a study to evaluate all publicly traded MBNQA winners from 1988-2002 this created a sample group of 18 companies. A benchmark group of 18 companies was created which had the same SIC industry codes as the MBNQA winners and similar sales revenue. Industry benchmarks were constructed by computing several median accounting metrics and comparing them to the company's actual metrics. The metrics included a market to book ratio, which was measured as the total market value of assets to the book value of assets for the company. The market value of assets is the sum of the market value of equity plus the book value of liabilities and preferred stock. Other metrics included standard price to earnings per share ratio and excess value ratio. While all measure have flaws since they

are not adjusted for industry effects and fluctuations, an adjusted value measure was used which compared the market value of each company was compared to the market value of each companies industrial segment. Univariate and multivariate tests were conducted during the analysis. The MBNQA winners performed significantly better than the industry medians in terms of profitability and assets utilization with more leveraged debt and spending more on capital expenditure, R&D and advertising. Winners were found to be more valuable than the benchmark group and are valued more highly by investors and are performance leaders in their industry. <sup>20</sup>

## Conclusion

When used effectively the MBNQA improves financial and non-financial performance. But it is like any other aspect of business, it is not a silver bullet and it requires the application of knowledge, judgment, clarification of appropriate expectations, evaluation of consequences and the ongoing monitoring of processes. This is the case whether an organization plans to apply for the MBNQA or to use the self-assessment process. <sup>17,18,24</sup> Perhaps Garvin put it best when he stated that while MBNQA winners are as vulnerable to economic downturns, shifts in fashion and technology and other environmental impacts they are better positioned than others to recover gracefully because they have superior management processes in place. <sup>1</sup> By supporting and promoting the improvement of service and quality to increase competitiveness, by providing resources and best practices to organizations that want to continue to improve and learn, the MBNQA is an invaluable resource. <sup>21, 23, 28</sup>

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Appendices

**Q-100 and S&P 500  
Compounded Performance**

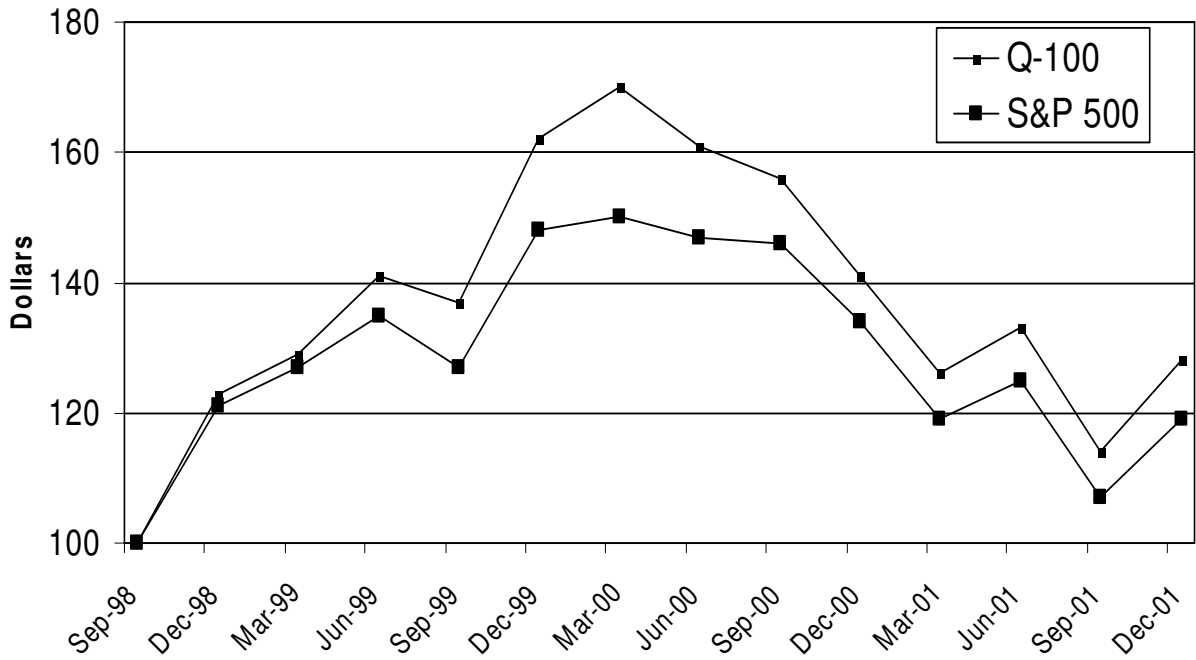


Table 1. 30