

THE FINANCIAL IMPACT OF MBNQA

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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. ¹ 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. ² 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. ^{3,4}

Despite this experience the significant detailed insights through case studies from Baldrige winners, questions still exist about MBNQA specifically in regard to its financial impact. Most of the issues that question MBNQA are based on perceptions and are rarely based on objective data and statistically valid analyses. ⁵

Studies on the Performance Impact of MBNQA

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. ⁶ 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 ⁷ compared 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 ⁸ 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 ⁸, 2003, p37) This study is supported by others using different methodologies.

Wisner and Eakins (1994) ⁹ 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 ¹⁰ 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 ¹¹ 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) ⁵ 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%.⁵

Jacob, Madu and Tang (2004)¹² 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.¹²

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.^{5,13} 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.^{14,15}

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