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Alexander Hausner
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UNIVERSITY OF WOLLONGONG

**BUSINESS SUCCESS AND ABEF EVALUATION
RESULTS**

**On the Nexus between Manufacturing Results and
Frameworks for Business Excellence**

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy (PhD)

from

UNIVERSITY OF WOLLONGONG

by

Alexander Hausner, Dipl.-Wirt. Ing.

Department of Mechanical Engineering 1999

Executive Summary*

The aim of the study was to find whether quantitative evidence exists to link the Australian Business Excellence Framework (ABEF) with business outcomes. Improvements in the top key performance indicators (KPIs) of 22 manufacturers are considered against their ABEF evaluation scores.

The Results

- ❶ The findings show a direct link between performance in the Awards and annual improvements in bottom line results. Organisations achieving high ABEF scores were found to belong to that group of firms with the highest performance across a wide range of indicators, including financial results and productivity. This also manifests itself in profitability measures.
- ❷ Every percent of improvement in the ABEF score is associated with an approximate 2% increase in the average annual KPI improvement. Multiple-award-entering companies have received even stronger relationships (ca. 4%) than those which participated only once.
- ❸ Higher-scoring organisations have been more successful in achieving positive improvements in their business results from year to year.
- ❹ Management aspects such as ‘senior executive leadership’, ‘analysis and use of data and information’, ‘measures of success’ and ‘planning processes’ were found to be of particular importance.
- ❺ Simple equations were developed which organisations can use to focus their improvement efforts, and benchmark their benefits from applying the ABEF.

The Methodology

This research, based on rigorous principles, involved 22 manufacturing companies across a range of 13 different industry sectors with sizes ranging from 25 to over 2000 employees. All companies had participated in the Australian Quality Awards for Business Excellence between 1992 and 1997, some more than once, but not all were winners. This group includes data from a wide array of low and high performing organisations with respect to both ABEF evaluation results and KPIs. The Award scores were correlated with the same organisations’ past business results. Nearly 1000 numerical, longitudinal and factual business performance measurements were taken, including typical bottom-line measures such as profitability, sales, costs and productivity with an overall emphasis on financial results.

In conclusion it can be said that an organisation’s success is clearly linked to the effectiveness of its management practices, as reflected in the ABEF evaluation results.

* This research project has created significant interest amongst management practitioners and leaders. Hence two types of summaries are presented. The ‘Executive Summary’ is aimed at the non-academic audience, whilst the ‘Abstract’ is a more traditional way of providing an overview of this PhD thesis.

ABSTRACT

A scarcity of information concerning the real impact of implementing Quality Management strategies on organisational performance is believed to be the principal reason why many organisations are still hesitant to adopt a Quality Management philosophy, and continue to perceive it as a theory with little applicability or benefit for their particular business environment.

The principal aim of this study is to investigate the relationship between management practice and business performance of organisations that have been evaluated through the Australian Quality Awards for Business Excellence. Based on quantitative analysis and empirical validation methods, evidence for the existence or non-existence of benefits is identified, from factual information, which leads to a conclusion of the debate as to whether this concept “works or not”. This part of the study also aims at testing the capability of a new model for explaining and predicting the overall business performance of manufacturing organisations with the input of Awards scores and other relevant business information.

A secondary aim is to explore the “Best” management practices of high performing organisations with a particular emphasis on common themes and attributes.

The ABEF, formerly known as the Australian Quality Awards framework, is used as a measure of the goodness of organisations’ management practices. Results in the form of scores are generated using a consistent and repeatable process of independent team evaluation, which are correlated with empirical factual data on the same organisations’ past Business results. Here ‘business results’ are defined as the top priority Key Performance Indicators (KPIs) of Australian manufacturing organisations, which have been evaluated in the period between 1992-1997. They include typical bottom-line measures such as profitability, sales, costs and productivity. Other relevant business data and information used for explaining business success includes specific industry characteristics such as rivalry, entry barriers and agility.

The study draws upon 22 different manufacturing companies, which participated in the Awards during the six years between 1992 and 1997. The companies are taken from a broad range of 13 different industry sectors and their sizes range from 25 to over 2000 employees. This well-diversified sample group includes data from a wide array of low and high performing organisations with respect to both AQA scores and KPIs.

Business performance measurements taken were mainly longitudinal (up to 8 years), numerical and factual observations. The business performance analysis is based on 945 data points in 283 Key Performance Indicators (KPIs) with a clear emphasis on financial results (one third) and other measures which are of primary concern to the business owner (i.e. two thirds). These business results have been compared to 34 Awards evaluation results, which consist of over 950 sub-scores. The framework specific analysis used the original population's 75 evaluation results with over 2000 data points (i.e. sub-scores).

In addition, surveys aimed at identifying industry characteristics regarding the existence of entry barriers, rivalry and features of agility (on a 5 point Leichhardt scale) were conducted.

Qualitative information on special events, or factors with significant relevance to business results, was collected during interviews and taken into account for the quantitative analysis which involved mainly correlation and multiple regression methods to test the association between the numerous variables. For this purpose factual business success records of the organisations' most important performance indicators were collected, analysed and summarised with the computation of overall annual improvement indices. Their relationships with the same organisations' Awards evaluation scores were investigated. A specific aim of this study was to address issues identified as shortcomings in recent research (e.g. bias and subjectivity of perception-based data).

This research outcome clearly identified a strong positive correlation between the Quality Awards evaluation scores and improvements in bottom line business results, including financial ones. Also, multiple-award-entering companies outperformed those who only participated once. Management aspects such as senior executive leadership, analysis and use of data and information, measures of

success and planning processes were of outstanding importance when compared to the rest of the Quality Management oriented framework. The balance between these was found to be misrepresented in the Framework's weighting. A detailed proposal for a different emphasis of certain items based on a redesign of the current weighting factors is therefore suggested. The study's findings regarding the importance and potential of certain management aspects for improvement provide an empirically validated rationale based on which organisations can prioritize or direct their organisational improvement efforts.

Organisations achieving high performing scores when evaluated against the Australian Business Excellence Framework (ABEF) were found to belong to that group of firms with the highest profits, productivity and other favourable results. The positive relationship found was strongly significant and suggested that every percent of improvement in the ABEF score is associated with an approximately 2% increase in the average annual KPI improvement. The accuracy of predicting the overall level of business success can be significantly enhanced through the use of the developed and validated model whose elements are a selection of explainable, external but relevant business factors. The research also found that higher scoring organisations were significantly more successful in continuously improving their business results from year to year.

It is concluded that striving for improvements against the ABEF is therefore in the interest of all stakeholders of an enterprise, particularly the business owner and/or shareholder. An organisation's success is clearly correlated with the effectiveness of its management practices as reflected through the Australian Business Excellence Framework.

Keywords: Quality Management benefits, Australian Quality Awards, Business Excellence, Australian Business Excellence Frameworks (ABEF), Business performance analysis, Management Correlation Study, High Performance prediction, Key Performance Indicators (KPIs), Manufacturing Performance, Business Success, Management principles.

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I am also indebted to my supervisors at the AQC, Dr. Colin Mills, Melissa Dunn-Lampe and Norbert Vogel, whose support of this project was vital to its feasibility. They not only accepted my research proposal in 1995 but also enabled access to the Award's data base, took responsibility for sponsorship and have been one of my most inspiring mentors and colleagues. It is the work in which I collaborated with the AQC during which I gained a solid understanding and genuine passion for the subject of Business Excellence.

Similarly I wish to thank all those other enthusiastic persons who are selflessly dedicating themselves to the continuous development of intellectual property and knowledge around an Australian Framework for Business Excellence (ABEF) to build Australia's industry and for letting me be part of this by taking my contributions on board. Australia and in particular the Quality Council is very fortunate to have such capable and generous support without which, no doubt Australia would not play such a visible role in the global scene. My witnessing of so many charitable and volunteer contributions with the aim of producing a cleaner, safer and more prosperous future (Sprouster 1996) has certainly made it easier to persevere and to bridge a lean and sometimes difficult period of four years of dedication to this research.

Special thanks are due to BHP Steel, who as the principal industry sponsors made a significant contribution towards the costs of this research project. I would also like to thank the Department of Mechanical Engineering for having employed me on a part-time basis.

Those organisations which have been involved in surveying and interviewing, and for providing the time to meet with the researcher deserve special recognition. It is hoped that involvement in this study was mutually beneficial to them, and that the evidence found may encourage them to continue their journey towards business excellence.

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Last but not least, I wish to thank my family for their patience and enduring support granted during a seemingly endless decade of tertiary education full of periods of stress and challenges but also significant joy, achievement and satisfaction. I am especially grateful to Lexa.

*Für meine Eltern und Lexa,
denen ich unendlich dankbar bin.*

BUSINESS SUCCESS AND ABEF EVALUATION RESULTS

On the Nexus between Manufacturing Results and Frameworks for Business Excellence

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