



# Self-assessment in a multi-organisational network

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Received August 2003  
Revised March 2004

## Abstract

**Purpose** – The New Zealand Benchmarking Club (NZBC), a multi-organisational network, aimed to improve the performance of member organisations through best practice benchmarking. The purpose of this paper is to critique the NZBC self-assessment process, report the scores for self-assessments from 2000-2002, and present an analysis of the 2001 self-assessment data.

**Design/methodology/approach** – A questionnaire measured the improvement rate of NZBC organisations through annual self-assessments against the Baldrige Criteria for Performance Excellence (CPE). Training was provided for facilitators in each organisation, who supported teams of four to six persons who completed the self-assessment. Correlation coefficients of pairs of CPE categories and items were used to identify strong relationships between them.

**Findings** – Self-assessment data from 2001 identified 57 strong relationships between different CPE categories and items. The strongest correlation identified (0.94) among CPE items was found between “customer focused results” and “financial and market results”. Acting on the self-assessment results, management initiatives were implemented and scores in 2002 showed significant improvements over 2001.

**Research limitations/implications** – Future research involves case studies and longitudinal studies of annual data to identify possible causes of the strong relationships found.

**Practical implications** – Results indicate the benefit organisations obtain from sharing best practices, resources, and self-assessment experiences. The practices required for effective administration of self-assessment in a network are given.

**Originality/value** – An example of self-assessment in a multi-organisational network, and how it was managed. Of interest to organisations that are in an existing network, or wish to create a similar network. No studies of self-assessment in a network were found in the literature.

**Keywords** Self assessment, Business excellence, Performance measures, New Zealand

**Paper type** Research paper

## Introduction

Self-assessment against a performance excellence model by organisations within a multi-organisational network can provide an effective basis for cooperative learning and benchmarking. In particular, member organisations can share their self-assessment results and strengths and opportunities to collectively improve performance. In addition, organisations that individually may find self-assessment difficult or too resource-intensive can cooperate with other network organisations, for example in sharing training resources, to develop a more effective and successful self-assessment process.

There are two main challenges in using a multi-organisational approach to self-assessment. Firstly, the commitment and personal involvement of managers is required especially if self-assessments results are to be shared. Secondly, an administration system is needed to coordinate the assessment process, including



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training, analysis of the completed assessments, preparation of reports, and regular networking meetings to discuss the assessment results and action planning.

This paper presents and discusses the multi-organisational approach to self-assessment used by the New Zealand Benchmarking Club (NZBC). Club member organisations are committed to a common strategic initiative of "improving organisational performance to world class levels by sharing and transferring best practices" (Mann, 2000). As part of this initiative all club members undertake an annual self-assessment against the Baldrige criteria for performance excellence (CPE). From considering the aggregated self-assessment results of member organisations, the club then sets-up benchmarking projects to address the areas of greatest concern for members. In addition, self-assessments help to identify those organisations that have higher levels of performance so that other club members know which organisations to approach to learn from. Finally, through calculating the average score of club members against the CPE the progress of club members to world-class performance can be tracked (Saunders and Mann, 2002).

In a study of self-assessment practices in Europe and Australia, Van der Wiele and Brown (1999) identified a number of approaches to self-assessment, and found that a management driven approach tended to work best. The NZBC approach to self-assessment is management driven. The senior management team from each member organisation commits to the club's process prior to joining the club (therefore attendance at meetings, participation in benchmarking studies and self-assessment, and commitment to a CPE improvement target of 50 points per year). NZBC administration services are provided by a small team funded by membership subscription, with an advisory group comprising of representatives of NZBC organisations having an oversight and governance role.

This paper has two main objectives. First, to provide a description and critique of the NZBC self-assessment process, including the benefits and difficulties NZBC members have found with self-assessment. Other networks can apply this knowledge to assist their members to improve their performance through self-assessment. Organisations that are not in a network can also use the information presented to create networks similar to the NZBC. Second, to report the NZBC average scores for the self-assessments from 2000-2002, and provide an analysis of the 2001 self-assessment data. This data provides an indication of the success of the NZBC, and highlights relationships between business enablers and results that can help organisations to determine where best to focus their improvement effort.

The paper is organised as follows. The next section outlines the evidence for the validity of the CPE framework and self-assessment against it, and the motivation of NZBC members to self-assess. The method section describes the NZBC's self-assessment questionnaire design, its deployment, and provides an analysis of the questionnaire data. This is followed by the findings, discussion of the results, and conclusions.

### **The Baldrige CPE and self-assessment**

The Baldrige CPE (also known as the New Zealand Business Excellence Framework in New Zealand) was developed primarily by practitioners (NIST, 2001). The items that make up the criteria are regularly updated in response to feedback from performance improvement practitioners and organisations that have applied for quality awards

based on the Baldrige CPE (NIST, 2001). Researchers who have investigated the CPE framework have found that it has considerable validity (Douglas and Judge, 2001; Ford and Evans, 2000; Hausner, 1999; Hendricks and Singhal, 1999; Pannirselvam and Ferguson, 2000; Wilson and Collier, 2000).

Hendricks and Singhal (1999) studied the long-term effects of implementing effective quality management programs. Using the winning of CPE quality awards as the criterion to select organisations, their research shows a strong link between quality and financial performance. The study found that US quality award winners experienced increased income, sales and total assets during their respective post-implementation periods as compared with their controls. Hausner (1999) found a similar link between quality and business results in a study of Australian Business Excellence Framework award winners and finalists. The Australian framework is derived from the CPE. Ford and Evans (2000) compared the strategic planning category of the CPE against the conceptual literature on strategic planning. They found substantial alignment between the planning framework of the CPE and the strategic management literature.

Pannirselvam and Ferguson (2000) reviewed quality management constructs that have been empirically tested for a relationship between quality management and business performance, and tested causal models based on the CPE framework. Using data from a US state quality award, they validated statistically the relationships between CPE categories. From their study of CPE quality award winners, Pannirselvam and Ferguson (2000) found the greatest determinant of organisational performance, both in the market and internally, to be customer focus and relationship management.

The effectiveness of self-assessment against business excellence models in improving performance has been well debated, and a number of self-assessment tools and approaches for both the CPE and the European Foundation for Quality Management (EFQM) models have been evaluated in the literature (European Foundation for Quality Management (EFQM), 1999; Jonas *et al.*, 2002; Jarrar, 2001; Lee and Quazi, 2001; Reames, 1998). The self-assessment process is one method of promoting continuous improvement, and is used to identify the areas where an organisation may most benefit from adopting a best practice approach (Van der Wiele *et al.*, 1996; Ford and Evans, 2001). In a study of European and Australian companies, Van der Wiele and Brown (1999) found a very positive perception about the effects of self-assessment on business results. Leggitt and Anderson (2001) reported the outcomes from improvement initiatives developed from a Baldrige CPE self assessment at a US hospital. These included market share improvement, listing as a top 100 hospital, and a successful complaint management program. In a study of nine large organisations, Samuelsson and Nilsson (2002) noted there was no universal method for self-assessment, and that successful approaches fit the organisation, are used continuously, and foster participation. The self-assessment process used by the NZBC has been developed using both the academic literature and practitioner experience, and this is detailed with examples in the method section. It is of particular interest due to the rigour of the self-assessment process and the fact that all NZBC organisations have committed to using it year on year, so that it provides a reliable means for assessing relative strengths and opportunities and tracking the overall NZBC score over time.

For NZBC members there are two main motivations for undertaking the self-assessment process. One is to monitor the improvement in their organisation, and the second is to determine the benchmarking gap between their organisation, other NZBC members and world-class performance, by comparing the scores obtained. By using tools such as gap analysis they then have the opportunity to develop improvement plans based on reliable data about their recent performance. An important aspect of self-assessment, particularly within a network format such as the NZBC, is that its cost in time and resources can be low, as training, analysis, reporting and administration costs are shared among the group.

Although aggregate self-assessment scores are presented in this paper to help illustrate the progress made by the NZBC as a group, and they are useful indicators of the outcome of the network's quality improvement journey, individual members are more focussed on their own improvement journey. There is a declared intent for all club members to improve their self-assessment scores by at least 50 points per year. To achieve this level of improvement members are committed to using benchmarking as a key tool for addressing their opportunities. This may involve participating in one of the club's benchmarking projects, or through learning from one of the better performing organisations within the club.

It is worth noting that assessments by external examiners against the CPE criteria are also used by NZBC members, particularly by organisations seeking a CPE award. However in 2001 most NZBC members were not seeking a CPE award, but wanted a critical assessment of the performance of their management systems.

## Method

### *Self-assessment*

The NZBC 2001 self-assessment questionnaire was modelled on the CPE and based on a similar style of questionnaire used in the UK. Mann's experience of leading the benchmarking and self-assessment initiative for the UK's food and drinks industry (Mann *et al.*, 1999) allowed eight years experience of review and development in the UK and New Zealand to be incorporated in the self-assessment process. A review was undertaken of more than 15 organisational self-assessment questionnaires before the NZBC 2001 self-assessment questionnaire was compiled (NZBC, 2001) and a team of experienced CPE evaluators approved the NZBC self-assessment process.

A review process is carried out annually on the self-assessment questionnaire. NZBC members had undertaken a self-assessment against the CPE in 2000, and the 2001 self-assessment questionnaire took account of feedback from the NZBC 2000 assessment. The NZBC Advisory Group, comprised of representatives from NZBC organisations, had reviewed the feedback. In planning the 2001 assessment the refinements suggested by this review were incorporated in both the content and the administration of the questionnaire.

### *Questionnaire design*

The questionnaire contained 99 questions, 66 covering the CPE enabler categories and 33 assessing the business results category. The CPE enabler categories were leadership, strategic planning, information and analysis, customer and market focus, human resource focus, and process management. Business results formed the seventh category. Each of the 18 criteria items had at least three questions. Figure 1 shows an

		Criteria: 1.1.b.2
<b>Area to be assessed:</b> Planning and deployment of improvement projects		
<b>1.9</b>	<b>Do our senior leaders ensure that our improvement projects/initiatives are clearly prioritised, linked to our strategic and operational plans, and communicated to the appropriate people?</b>	
<b>Evidence:</b>	<ul style="list-style-type: none"> <li>▪ Do we integrate improvement activities into our annual business plan?</li> <li>▪ Do we have a process for prioritising actions (e.g. cost – benefit analysis)?</li> <li>▪ Does our approach show that we are careful not to work on too many improvement actions/strategies at one time? – (continuous improvement of everything can lead to disaster)</li> <li>▪ Can we present adequate evidence that shows actions are properly communicated to the right individuals both inside and outside the organisation (such as customers and suppliers)?</li> </ul>	
<input type="checkbox"/>	<b>1</b>	<b>No</b>
<input type="checkbox"/>	<b>2</b>	<b>Rarely prioritised, rarely linked, rarely communicated</b>
<input type="checkbox"/>	<b>3</b>	<b>Sometimes prioritised, sometimes linked, sometimes communicated</b>
<input type="checkbox"/>	<b>4</b>	<b>Usually prioritised, usually linked, usually communicated</b>
<input type="checkbox"/>	<b>5</b>	<b>Always prioritised, always linked, always communicated</b>
<input type="checkbox"/>	<b>6</b>	<b>Always prioritised, always linked, always communicated and approach reviewed for effectiveness</b>
Refer to the Glossary of Terms for an explanation of: <i>Strategic and operational plans</i>		

**Figure 1.**  
Example question from  
the 2001 NZBC  
questionnaire



example question. The relevant criteria number was included for each item. The questionnaire included an evidence section that provided additional questions to help clarify the evidence the organisation should consider in answering the main question. An explanation section was also included that provided descriptions of terms.

The questionnaire format allowed qualitative data to be obtained efficiently. The questionnaire also enabled the qualitative self-assessment data to be analysed in a quantitative way, as numerical scores within the CPE categories (NZBC, 2001). CPE assessments are scored from a total of 1,000 points, with 550 points assigned to the enabler criteria (management areas from one to six) and 450 points assigned to the business results criterion (category seven). The scoring system used for the questionnaire was linked to the Baldrige CPE scoring guidelines (for a copy refer to NIST, 2001). A panel of experienced CPE-trained evaluators selected the weighting percentage assigned to each response for each question, to ensure that it was aligned to the CPE scoring guidelines. The CPE scoring system has three dimensions: approach, deployment and results. The first two scoring dimensions are applied to the enabler criteria, and the results dimension to category seven (business results). All responses to questions within a particular category item were then aggregated, averaged and then weighted using the weighting allocated to each item by the CPE.

There were six potential responses for each question, with a maximum score for any question of 85 per cent. This limited the maximum score obtainable for the self-assessment questionnaire to 850, instead of the 1,000-point maximum for a full independent assessment against the CPE. According to Brown (2000), an overall CPE score of 100 per cent should be considered impossible to achieve, and a score of 50 per cent is a high score and is not considered average or easy to achieve. Limiting the maximum score to 850 takes account of the fact that it is difficult to design

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self-assessment questionnaires that allow an organisation to score at the high end against the CPE (as the questions would need to become quite complex and more of them would be required). This is a limitation of a self-assessment questionnaire format compared to a CPE quality award assessment. An assessment for a quality award involves site visits and interviews by outside assessors, permitting a more independent evaluation than self-assessment (Hutton and Topp, 1999).

Hutton and Topp (1999) outlined the basic principles that they contend assessment design should follow: ensure senior management buy-in; get input from all levels and functions; focus on improving business results, not on recognition or scores; plan the improvements and assign responsibilities; ensure follow-through; and integrate the assessment process into the planning system. These principles were observed in the design of the NZBC self-assessment process, and formed the basis of the training for members prior to completing the self-assessment questionnaire.

### *Training*

Initial training began with the NZBC director orienting senior management in member organisations to the Baldrige CPE process and obtaining their assurance of full organisational commitment. The NZBC director, a Baldrige CPE-trained examiner, was actively involved in training and oversaw the process. Each organisation identified a facilitator who was to be trained in the criteria to lead the assessment. A one-day workshop was held to familiarise facilitators with the criteria, their categories, the assessment process, and how to complete specific questions in the assessment. The training promoted consistency in the interpretation of the questionnaire items, and moderated the possibility of scoring variations between inexperienced facilitators (Yang *et al.*, 2001). The action planning process was emphasised as a means of integrating the information obtained from the self-assessment into the strategy for further performance improvement.

### *The assessment process*

The self-assessment process used was very prescriptive, and was completed over a one-month period in 2001. Teams of at least four persons were formed to complete the assessment in each organisation. The facilitator selected a team with as broad a representation of services and departments as possible (18 people in one large organisation). The facilitator did not complete the questionnaire but provided support for team members. The team members individually completed the questionnaire in preparation for the consensus meeting. The consensus meeting was one to two days in length. The time spent on the self-assessment process in each organisation varied from 15 to 50 hours, averaging 20 to 25 hours. The completed assessments were returned to the NZBC director for analysis.

The analysis of the self-assessment questionnaire for each participating organisation was completed and scored according to the principles and points allocation outlined in the CPE. As experienced CPE evaluators were involved in the design of the questionnaire, it is believed that the self-assessment results in this study provide a good guide to an organisation's relative strengths and opportunities for improvement and a fair guide to an organisation's CPE score. Most scores are estimated to be within  $\pm 20$  per cent of the score that would be identified by a more rigorous assessment using external evaluators that have an in-depth knowledge of the

CPE. The widest variation is estimated to be  $\pm 40$  per cent. These figures were estimated by an experienced team of CPE evaluators after considering data obtained from two organisations that undertook an evaluated CPE assessment at a similar time to the self-assessment, and using their knowledge of the CPE and self-assessment process.

The scores for all organisations in each CPE item and category were entered into Minitab (version 13.0) and collated. Correlation coefficients were obtained for all combinations of pairs of CPE categories and items, and were used to identify strong relationships between them. Other statistical techniques were considered to further analyse the correlations. Exploratory factor analysis (EFA) would ideally be performed on the enabler and business results category data to determine the enablers that have the main effects on results. The sample was however less than the recommended size of at least 150 observations (Rahman, 2002) and therefore EFA would not give reliable solutions.

An individual report was written for each member, detailing the results and analysis of their self-assessment. The report compared members' results within other members of the NZBC (with the identity of each organisation coded to preserve anonymity) and against world-class performance, and identified areas for improvement. In addition to the feedback report, members also met for a day to share the findings from their self-assessments and the names of the top three organisations per criteria item was communicated to encourage best practice sharing.

## Results

A total of 15 organisations completed the NZBC's annual self-assessment against the CPE criteria in 2001. The categories with greatest opportunities for improvement were leadership (primarily because this category is given the highest point weighting by the CPE), information and analysis, customer and market focus, and strategic planning (NZBC, 2001). The NZBC's areas of greatest strength were human resource focus and process management.

The CPE enabler items that were identified as key opportunities for improvement were, ranked in order: organisational leadership, measurement and analysis of organisational performance, customer relationships and satisfaction, strategy deployment, and product and service processes.

A number of significant relationships were identified when the NZBC 2001 self-assessment data were analysed. A total of 57 strong correlations were found between CPE categories and items ( $r > 0.705$ ,  $p < 0.004$ ). The strongest relationships are shown in Table I. The correlation matrices for the seven CPE categories and the 18 CPE items are shown as Tables II and III, along with a description of the CPE categories and items (see note in Table III).

Four of the most significant relationships identified are presented below. These have been chosen as examples because they involve business results (CPE results – category 7), and therefore were of particular interest to managers, who typically represent NZBC organisations at network meetings. These relationships were presented to senior managers at the annual NZBC self-assessment results meeting in November 2001, and were highlighted in the published results that were distributed to all NZBC members. Each data point on the scatter graphs represents one NZBC organisation.

Item or category	Item or category	Strength of relationship	Correlation coefficient ( <i>r</i> )	Significance ( <i>p</i> -value)
7.1 Customer focused results	7.2 Financial and market results	Very strong	0.937	0.000
7.4 Organisational effectiveness results	7.2 Financial and market results	Very strong	0.913	0.000
1. Leadership	2. Strategic planning	Very strong	0.910	0.000
1. Leadership	2.1 Strategy development	Strong	0.875	0.000
1.1 Organisational leadership	2. Strategic planning	Strong	0.844	0.000
7.1 Customer focused results	7.4 Organisational effectiveness results	Strong	0.824	0.000
6.3 Support processes	7.2 Financial and market results	Strong	0.819	0.000
1.1 Organisational leadership	2.1 Strategy development	Strong	0.816	0.000
5.2 Employee education, training and development	6.1 Product and service processes	Strong	0.810	0.000
6. Process management	5.2 Employee education, training and development	Strong	0.801	0.000
5. Human resource focus	4.2 Information management	Strong	0.799	0.000
6.3 Support processes	7.0 Business results	Strong	0.794	0.000
1. Leadership	2.2 Strategy deployment	Strong	0.794	0.000
7.1 Customer and market focus	7.2 Financial and market results	Strong	0.793	0.000
6.3 Support processes	7.4 Organisational effectiveness results	Strong	0.791	0.000
2. Strategic planning	1.2 Public responsibility and citizenship	Strong	0.788	0.000
Enabler points (aggregation of categories 1 to 6)	7.4 Organisational effectiveness results	Strong	0.783	0.001
Enabler points (aggregation of categories 1 to 6)	7.2 Financial and market results	Strong	0.779	0.001
6. Process management	7.2 Financial and market results	Strong	0.774	0.001
Enabler points (aggregation of categories 1 to 6)	7. Business results	Strong	0.771	0.001
3.1 Customer and market focus	7.1 Customer focused results	Strong	0.767	0.001

**Note:** The CPE item or category numbers are shown in front of the item/category descriptions

**Source:** NZBC (2001)

**Table I.**  
Key relationships  
between CPE items and  
categories

Figure 2 provides strong evidence of the relationship between the management systems an organisation employs (the CPE enablers – categories 1 to 6) and the business results it achieves (CPE results – category 7). This graph shows the spread of CPE scores from 15 self-assessments.

Another particularly strong relationship was identified between organisational effectiveness results and financial and market results (an item in CPE results) (see Figure 3).

Figure 4 shows a very strong positive relationship between the scores for members' customer-focused results and their financial and market results. This indicates that organisations that score highly in customer-focused results also score highly in financial and market results. A strong positive relationship is also shown in Figure 5

CPE category	1 (L'ship)	2 (SP)	3 (C&MF)	4 (I&A)	5 (HRF)	6 (PM)	7 (BR)
1 Leadership	1.00						
2 Strategic planning	0.91	1.00					
3 Customer and market focus	0.53	0.53	1.00				
4 Information and analysis	0.62	0.68	0.66	1.00			
5 Human resource focus	0.76	0.73	0.56	0.66	1.00		
6 Process management	0.55	0.52	0.69	0.60	0.71	1.00	
7 Business results	0.52	0.60	0.71	0.66	0.67	0.74	1.00

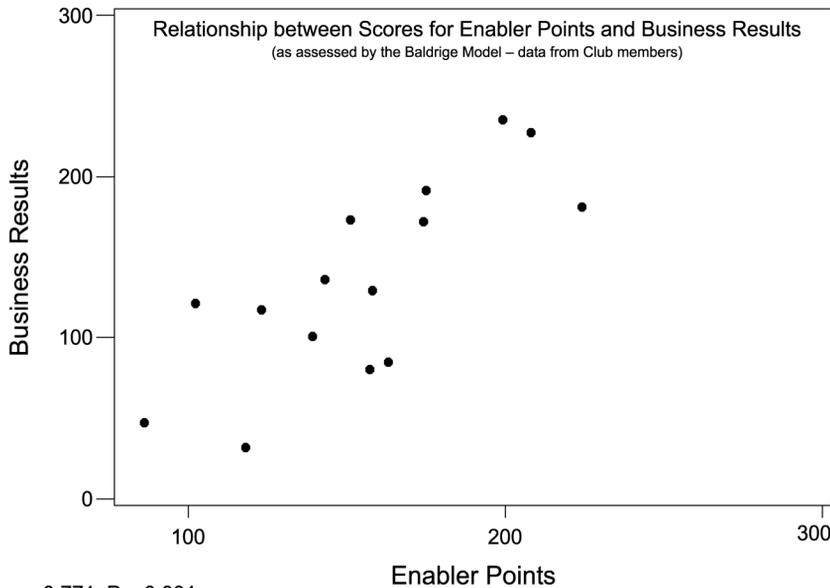
**Table II.**  
Correlation matrix for the seven CPE categories

Source: NZBC (2001)

Item no.	1.1	1.2	2.1	2.2	3.1	3.2	4.1	4.2	5.1	5.2	5.3	6.1	6.2	6.3	7.1	7.2	7.3	7.4
1.1	1.00																	
1.2	0.58	1.00																
2.1	0.82	0.47	1.00															
2.2	0.74	0.69	0.71	1.00														
3.1	0.40	0.54	0.54	0.39	1.00													
3.2	0.39	0.56	0.48	0.33	0.72	1.00												
4.1	0.38	0.63	0.42	0.67	0.39	0.63	1.00											
4.2	0.63	0.59	0.59	0.70	0.75	0.65	0.73	1.00										
5.1	0.56	0.40	0.49	0.71	0.44	0.33	0.50	0.75	1.00									
5.2	0.65	0.48	0.59	0.36	0.60	0.42	0.22	0.61	0.63	1.00								
5.3	0.73	0.58	0.65	0.67	0.47	0.50	0.61	0.68	0.52	0.66	1.00							
6.1	0.41	0.33	0.44	0.08	0.61	0.41	0.24	0.56	0.33	0.81	0.43	1.00						
6.2	0.46	0.47	0.58	0.56	0.62	0.58	0.61	0.73	0.66	0.59	0.46	0.63	1.00					
6.3	0.61	0.40	0.54	0.52	0.66	0.53	0.39	0.76	0.56	0.64	0.57	0.59	0.71	1.00				
7.1	0.27	0.34	0.41	0.36	0.77	0.65	0.38	0.65	0.61	0.55	0.27	0.54	0.76	0.73	1.00			
7.2	0.44	0.43	0.52	0.51	0.75	0.72	0.56	0.76	0.63	0.56	0.49	0.56	0.77	0.82	0.94	1.00		
7.3	0.48	0.31	0.41	0.56	0.09	0.35	0.53	0.37	0.42	0.32	0.57	0.15	0.39	0.44	0.39	0.53	1.00	
7.4	0.53	0.54	0.59	0.64	0.65	0.58	0.54	0.67	0.57	0.59	0.58	0.53	0.75	0.79	0.82	0.91	0.66	1.00

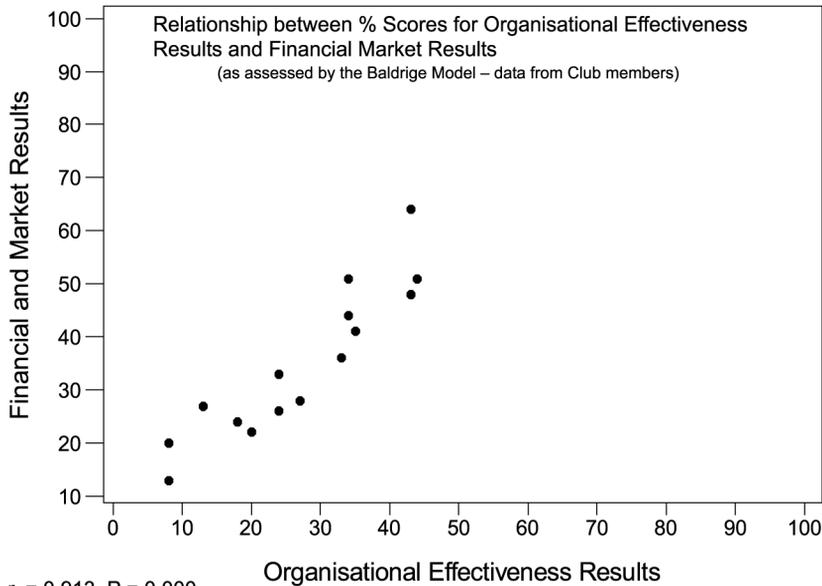
**Notes:** 1.1 – Organisational leadership; 1.2 – Public responsibility and citizenship; 2.1 – Strategy development; 2.2 – Strategy deployment; 3.1 – Customer and market knowledge; 3.2 – Customer relationships and satisfaction; 4.1 – Measurement and analysis of organisational performance; 4.2 – Information management; 5.1 – Work systems; 5.2 – Employee education training and development; 5.3 – Employee well-being and satisfaction; 6.1 – Product and service processes; 6.2 – Business processes; 6.3 – Support processes; 7.1 – Customer focused results; 7.2 – Financial and market results; 7.3 – Human resource results; 7.4 – Organisational effectiveness results  
Source: NZBC (2001)

**Table III.**  
Correlation matrix for the 18 CPE items



r. = 0.771, P = 0.001

**Figure 2.**  
Relationship between scores for enabler points and business results

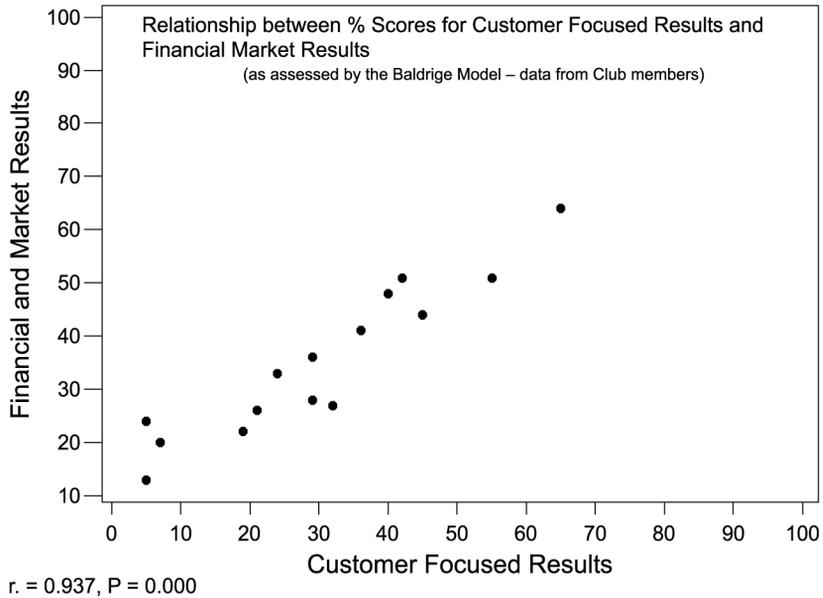


r. = 0.913, P = 0.000

**Figure 3.**  
Organisational effectiveness results and financial and market results

between customer and market focus and customer-focused results. Although this relationship may appear trivial, in that improved customer focus could be expected to result in increased customer satisfaction, it is important because of its link with financial and market results. This linkage is explored in the discussion section.

**Figure 4.**  
Customer focused results  
and financial and market  
results



**Figure 5.**  
Customer and market  
focus enablers and  
customer focused results

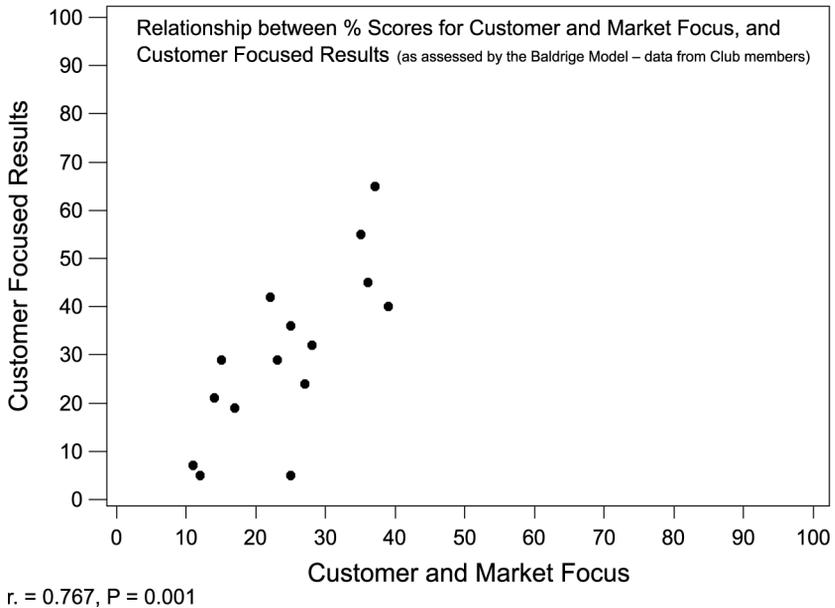


Table IV shows NZBC scores for the seven members that participated in all three annual self-assessments, 2000-2002, with New Zealand benchmarks for comparison. Drawing on the experience of the New Zealand Business Excellence Foundation, who conduct CPE-based assessments throughout New Zealand, it is believed that the

average score of a New Zealand organisation is around 150 points. A New Zealand National Award winner deemed to be world class would score greater than 600 points.

Only the average scores for the seven members that participated in all three annual self-assessments are given in Table IV. This gives a more revealing comparison of the annual average improvement than would the average annual scores for all NZBC members, that are affected by changes in membership from year to year. Table IV shows the significant increase in average score for 2002, an improvement of 75 points over the 2001 average score.

## Discussion

### *Identification of key determinants of business success*

The analysis of the CPE self-assessment results of NZBC members in 2001 identified 57 strong relationships (with correlation coefficients greater than 0.7) between different CPE categories and items. The strongest correlation identified between CPE items (a correlation of 0.94) was found between “customer focused results” and “financial and market results” (see Figure 4) in support of the findings from Pannirselvam and Ferguson (2000). From their study of Baldrige quality award winners, Pannirselvam and Ferguson (2000) found the greatest determinant of organisational performance, both in the market and internally, to be customer focus and relationship management.

One of the strongest relationships identified between CPE categories was between CPE “enablers” and “business results”, a correlation of 0.77. The relationship indicated that organisations that score highly for management systems as assessed against the CPE criteria also score highly for financial and market results (see Figure 2). Although scatter graphs do not identify causal relationships, it is clear from Figure 2 that organisations with excellent approaches to leadership, strategic planning, customer and market focus, information and analysis, human resource focus and process management are more likely to achieve excellent business results (composed of customer satisfaction results, financial and market results, human resource results, and organisational effectiveness results). This relationship was also identified in an analysis of the NZBC’s self-assessment results in 2000 (NZBC, 2001).

The findings reveal two sets of relationships that warrant further investigation. These are the very strong positive relationships between customer and market focus systems and customer focused results (Figure 5), and customer focused results and financial and market results (Figure 4). It is possible to track a relationship from customer and market focus systems to customer focused results, and then to financial and market results. This suggests that improving the performance of customer and market focus systems can improve financial and market results. It also indicates the

	CPE points score
New Zealand organisation average score	150
2000 NZBC average score	260
2001 NZBC average score	287
2002 NZBC average score	362
Highest points score of NZBC member, 2001	435

**Note:** There was a substantial increase in the NZBC average score in 2002 over 2001

**Table IV.**  
NZBC scores for the seven members that participated in all three self-assessments, 2000-2002; and New Zealand benchmarks

importance of measuring the performance of an organisation's customer and market focus systems and customer focused results as these can provide an early indication of future financial results. This in turn suggests that the responses to the ten questions in the customer and market focus section of the questionnaire give a good indication of an organisation's future financial results. The ten customer and market focus questions are listed in Table V.

*The role of the self-assessment process in organisational improvement*

The analysis of the assessments revealed that, within organisations, most had areas in need of improvement. To facilitate their improvement plans many members joined NZBC benchmarking projects or initiated other specific projects based upon the results of the assessment. For example, NZBC benchmarking projects were formed in the CPE categories of leadership, customer and market focus, information and analysis, strategic planning, and human resources (Saunders and Mann, 2002). After the self-assessment results meeting in November 2001, where the correlations were presented and the link between customer and market focus and financial and market results was highlighted, a number of members implemented their own initiatives, particularly to improve customer focus systems.

Subsequent self-assessments provided the data to allow members to examine the effectiveness of these initiatives. While the impressive 75 point increase in average scores for 2002 over 2001 (Table IV) cannot be attributed solely to the 2001

CPE no.	Self-assessment question
3.1.a.1	Do we define who our customers are (from which market segments) and clearly identify their needs?
3.1.a.2	Do we effectively determine key product and service features and their relative importance to customers?
3.1.a.2	Do we collect a variety of data/information that helps us to determine current and future customer requirements for all our services and/or products?
3.1.a.2	Do we have effective processes/methods for ensuring that customer information is used effectively so that our products and services are continually improved to meet current and future customer requirements?
3.1.a.3	Do we evaluate the usefulness of our customer information and data gathering methods?
3.2.a.1	Do we have an effective process in place to build customer loyalty and retain current business as well as generate positive referrals?
3.2.a.2	Do we use a variety of methods to make it easy for clients to seek assistance and comment on the quality of the services or products we provide?
3.2.a.3	Do we seek, monitor and record customer complaints and take appropriate action to ensure that problems do not occur again?
3.2.b.1	Do we employ a variety of methods and measures (e.g. surveys, interviews, and focus groups) that provide customer satisfaction and dissatisfaction information that is used for improvement?
3.2.b.3	Do we use thorough and objective methods and sources to determine how our organisation's level of customer satisfaction compares with those of all major competitors?

**Table V.**  
Customer and market  
focus questionnaire items

**Source:** NZBC (2001)

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self-assessment process and the improvement initiatives that were subsequently deployed, feedback from managers suggests they played a significant role.

An evaluation meeting was held following the reporting of the self-assessment results. Feedback from the evaluation meeting showed many managers valued the learning they experienced by participating directly in the assessment process. A theoretical explanation for the improvement of NZBC self-assessment scores over time is the internal motivation that managers have to self-assessment, and the subsequent management-driven improvement initiatives based on data from the self-assessments. Van der Wiele *et al.* (2000) noted that self-assessment is usually an internally motivated change process, with the personal involvement of managers in self-assessment an important motivator for implementing and continuing self-assessments. At the evaluation meeting there were also comments that in some organisations there was a lack of action by management on the opportunities for improvement identified during the self-assessment process, an issue also documented by Ford and Evans (2001). This highlights the important role that action planning for improvement plays.

The NZBC assessment process effectively ends with the presentation of the evaluative report, which identified strengths and opportunities for improvement. However this feedback report also describes a suggested method for developing an action plan. This involves the management team agreeing on an action planning process and selecting category leaders to ensure implementation of agreed actions. An action planning meeting follows to reach provisional agreement on all actions. The potential impact of each action on each item is then assessed to check that the actions have been prioritised appropriately. After the sign-off of the action plan category leaders conduct regular progress reviews.

#### *Limitations of self-assessment*

For the NZBC self-assessments there was no formal moderation of the scores, or independent validation of the scores through site visits and interviews. This raises the question of the accuracy and validity of the self-assessment scores, which could be subjectively biased, and therefore invalidate the correlations among items from the self-assessment instrument. This issue has been addressed in a study by Lee and Quazi (2001) that has confirmed the accuracy and validity of a well-constructed self-assessment. They tested the scores from a self-assessment questionnaire against the scores of the same organisations in their quality award applications. The results showed significant correlation between the assessment score bands and the actual score bands received in their quality award application (Lee and Quazi, 2001).

The main objective of the annual NZBC self-assessment is to provide scoring data that will assist member organisations to improve. Whilst it is useful to demonstrate a strong relationship between the scores obtained by the self-assessment method as compared to a full quality award assessment, for the NZBC questionnaire one of the prime benefits was that it provided a relative score against other organisations that took part and used the same process.

#### *The value of self-assessment data for business research*

Typically it is very difficult to find conclusive evidence of relationships between success factors in a business. This is due to the dynamic nature of the business environment and the difficulty of developing assessment tools that can isolate success

determinants within a business and generate sufficient data to provide conclusive evidence of a relationship.

The likely reasons why a number of strong relationships have been able to be identified in the NZBC 2001 data are:

- A self-assessment derived from the CPE provides a complete assessment of an organisation, with the CPE accepted worldwide as a valid organisational performance model. The NZBC self-assessment questions and response weightings were aligned to the CPE scoring guidelines and checked by experienced CPE evaluators.
- The self-assessment has been applied reasonably consistently by all NZBC member organisations. The self-assessment process used is very prescriptive, and all members also attend a training day in the process. These measures promote consistency in the interpretation of the questionnaire items, and moderate the scoring variations that can occur between assessors (Yang *et al.*, 2001).
- The self-assessment questionnaire has been developed to a level that allows a reasonably accurate assessment against the criteria. Studies of similar self-assessments have shown that the scores correlate closely with actual scores obtained in quality award applications (Lee and Quazi, 2001).

### **Concluding remarks**

The analysis of the NZBC self-assessments for 2001 identified many strong and statistically significant relationships between CPE categories and items. For example, financial and market results showed a strong correlation with customer focussed results, customer and market systems, and organisational effectiveness results. Business results showed a strong correlation with management systems (as assessed by the CPE enabler criteria). For NZBC members, the 2001 correlations highlighted the CPE items and categories that were strongly associated with business results. This directed management attention to those areas that, if improved, could produce the greatest positive effect on organisational performance. The correlations had particular value to NZBC members that had similar scores across all the CPE categories, as their individual assessment did not give them a clear indication of where to most effectively target their improvement effort.

While a number of correlations with business success have been identified in the NZBC 2001 data, further work is needed to identify the possible causes that underlie these relationships. Current work with NZ CPE-aligned organisations involves case studies that are investigating the relationship between organisational performance and customer and market focus, strategy deployment, and the CPE improvement journey. These have been identified from the self-assessment data as productive research areas for the management of organisational quality improvement. A longitudinal study of the annual NZBC self-assessment data to further investigate the relationships between self-assessment, the enabler criteria, and business results will contribute to theoretical and conceptual development (Saunders and Mann, 2002). Future research will compare NZBC self-assessment data with externally evaluated assessments, as NZBC members apply for CPE-based quality awards. This will test the validity and reliability of scores

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obtained from the NZBC self-assessment questionnaire against the scores of the same organisations in their quality award applications.

The New Zealand experience with performance improvement can be compared with Australia. Van der Wiele and Brown (2002) found that in the 1990s many Australian organisations had goals of applying for an Australian quality (business excellence) award and were using the self-assessment framework to guide their quality management efforts, often using consultants for the process. More recently most of the organisations have relied on their own resources to pursue quality and consultants were only used for very specialised services (Van der Wiele and Brown, 2002). This is similar to the New Zealand experience. Many New Zealand organisations are members of the New Zealand Business Excellence Foundation, who administer the New Zealand CPE Business Excellence Awards, and use the CPE framework to guide their performance improvement. While some NZBC members seek a CPE award, most rely on self-assessment to evaluate their management systems, and use the services provided by the NZBC to achieve this in preference to using consultants (Saunders and Mann, 2002).

Some difficulties do occur in using self-assessment in a network environment to investigate performance improvement. There is an annual turnover of members in the NZBC, and this change in membership means there are a limited number of organisations that have completed a consecutive series of self-assessments. This limits the number of organisations available for longitudinal studies, with seven of the 13 NZBC members who undertook self-assessment in 2000 also self-assessing in 2001 and 2002. Another difficulty for longitudinal studies is the fact the CPE are reviewed annually. Although the changes have been relatively minor since 2000, they do mean that the self-assessment questionnaire is altered to reflect changes to the criteria, and therefore self-assessment results from different years are not completely comparable. However a potentially larger issue is that of scoring variations caused by inexperienced assessors. This issue has been minimised by the NZBC training process.

The complexity of CPE based self-assessment can daunt smaller organisations that have limited resources to commit to the process. Instead of a full award-based self-assessment, Biazzo and Bernardi (2003) suggest a self-assessment against a partial application of excellence models as a less complex option for SMEs. However the approach of the NZBC has helped overcome this difficulty, as the network format provides expertise and reduces the time and resources required for training, analysis, reporting and associated administration.

Besides pooling resources and expertise in self-assessment, other advantages of self-assessing within a multi-organisational network include sharing experiences with improvement initiatives and transferring best practices. The information in this paper can be used by practitioners to assist other networks to improve their performance, and to assist organisations that are not in a network to create networks similar to the NZBC.

Self-assessment is only one instrument in quality improvement, and the sustained increases in performance shown by NZBC members are due to a combination of actions including identifying opportunities for improvement based on the assessments, implementing action plans based on these opportunities, and sharing good-to-best practices. The strength of a self-assessment against the CPE lies in its comprehensive nature and its generic format (Reames, 1998). These features have allowed a diverse

network of organisations to share resources to train staff in the assessment process, and to collectively improve both the assessment tool and their organisational performance.

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### Further reading

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