ESTABLISHING A BASELINE FOR PERFORMANCE EXCELLENCE MEASUREMENT

Jane E. Humble, PhD
Arizona State University, Dept. of Technology Management, 6075 S. Williams Campus Loop W, Mesa AZ 85212
480-727-1304, jane.humble@asu.edu

William R. Peterson, PhD
Arizona State University, Dept. of Technology Management, 6075 S. Williams Campus Loop W, Mesa AZ 85212
480-727-1582, william.r.peterson@asu.edu

Abstract

Performance excellence programs are implemented to help organizations achieve higher levels of profitability, greater organizational effectiveness, increased competitive advantage, and improved market share. Before and after metrics can be helpful in tracking progress toward goals in these areas. One assessment tool that has been widely used is the online survey called "Are We Making Progress", which was developed by the US Department of Commerce, National Institute of Standards and Technology (NIST). The survey consists of 40 questions that ask probing questions in organizational areas corresponding to the seven Baldrige categories: leadership; strategic planning; customer and market focus; measurement, analysis, and knowledge management; human resource focus; process management; and business results. Over 100 of these NIST surveys have been administered by the Arizona State University (ASU) Department of Technology Management to selected organizations in Arizona. The sample consists of organizations of all sizes and from many different sectors of the economy. Taken together, they form a baseline for comparison for similar organizations.

Background

As discussed by Evans (2005), the origins of the American quality management techniques can be traced back to the Industrial Revolution; however, the modern day Quality Management (QM) movement began in the 1920s at the Western Electric Company/Bell Telephone Laboratories. This version of QM revolved around statistical quality control in manufacturing processes. By the 1980s American companies had started to jump on the Quality Management bandwagon, and began applying some of the evaluation and improvement methods to their own manufacturing processes. But the modern day quality management movement incorporates more than just reducing defects in manufacturing, it includes the entire organization, including manufacturing process and human resources element of the organization. Looking beyond manufacturing, today's quality management programs have also been shown to increase performance in services, health care, education, government agencies, and all types of businesses, hence the new term, Total Quality Management, or TQM. (Evans, 2005; Goonan, 2007; Humble, 2005)
By moving beyond manufacturing processes, managers looked to use TQM tools to create organization-wide performance excellence. TQM principles have been embraced by manufacturing companies, as well as service organizations, such as education, healthcare, and governmental agencies. From the onset there has been no one, universal, TQM philosophy. Nor is there a standard set of tools for achieving total quality, or even one common understanding of quality or business excellence. There are, today, several popular philosophies and principles of quality management, including ISO 9000, Six Sigma, Lean Manufacturing, Lean Enterprise, and still continuing in its popularity, TQM.

Regardless of the specific philosophy taken to generate quality improvement, several basic principles apply to modern quality improvement processes. Quality improvement involves organizational culture change, organizational learning, focus on customers and stakeholders, employee empowerment, using teams, and continuous process improvement.

**Problems Facing Many Organizations**

The literature documents a number of problems that a typical organization encounters when implementing a quality program (Davis & Kathuria, 1999). Limited resources magnify the difficulties that small and medium-sized organizations typically struggle with when attempting to prioritize a problem solving protocol. The inevitable result of inadequate resources is that many organizations respond continuously to sporadic emergent problems, without being able to implement sound preventative methods. So what quality managers often do is “fight fires” instead of preventing them because of the lack of funding or upper management support.

In their research, Fazel and Salegna (2000) found that the most significant obstacles prohibiting companies from achieving a quality program are the lack of strong leadership from upper management and no clear quality focus. Small businesses face great pressure in maintaining a high performance level to stay competitive. A lack of resources and a mandate for productivity while attempting to maintain quality, are a constant challenge. Employee performance is also linked proportionally to quality. If too much pressure is placed on employees, production quantity may prevail over quality. When management puts too much emphasis on output quantity, a perceived indication is that quality is not the top priority. The inevitable cost of not working towards or maintaining a quality philosophy can cause loss of market share, or place a company out of business. (Gryna & Watson, 2001)

The two main types of quality cost are internal and external cost. Internal costs are associated with defective products before reaching the customer. The internal costs include but are not limited to scrap, rework, and non-conforming parts that do not meet the customer specifications. External costs are incurred when the product reaches the customer. These costs are incurred when there is warranty work required or a product must be replaced after the customer has the product in their possession. The total cost of quality is the sum of internal and external cost (Miller & Morris, 2000).

Poor quality has an adverse effect on the competitive strategy of the United States to achieve its global market share. When products made in the United States are deemed inadequate on the basis of quality, this impacts the national competitiveness of sales to international customers.
Loss of tax revenue that is generated from international sales has a trickle down effect on the national budget. In 1988, the United States lost an estimated 20% of gross sales revenue because of poor quality (Halevy, 2000). What has been found to be a leading cause of this loss is a lack of planning and commitment by upper management. Since 90% of American businesses are classified as small, it can be inferred that many small businesses fail because of a lack of maintaining upper management support for a quality philosophy (Halevy, 2000; Jacksack, 2000). The most frequently reported obstacles to the implementation of a TQM philosophy are shown in Table 1.

<table>
<thead>
<tr>
<th>Number</th>
<th>Obstacle</th>
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<tbody>
<tr>
<td>1</td>
<td>Lack of company-wide definition of quality</td>
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<tr>
<td>2</td>
<td>Lack of a formal strategic plan for change</td>
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<tr>
<td>3</td>
<td>Lack of customer focus</td>
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<td>4</td>
<td>Poor inner-organizational communication</td>
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<tr>
<td>5</td>
<td>No real employee empowerment</td>
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<tr>
<td>6</td>
<td>Failure of employees to trust upper management</td>
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<tr>
<td>7</td>
<td>Thinking of quality as a quick fix</td>
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<tr>
<td>8</td>
<td>Drive for short-term financial results</td>
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<tr>
<td>9</td>
<td>Inner-politics amongst the ranks</td>
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<tr>
<td>10</td>
<td>Lack of strong motivation towards quality goals</td>
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<tr>
<td>11</td>
<td>No time devoted towards quality initiatives</td>
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<tr>
<td>12</td>
<td>No real leadership</td>
</tr>
</tbody>
</table>

(Source: Fazel & Salegna, 2000)

Methodology

The organizations, based in Phoenix Metropolitan area, have surveyed using a survey instrument created by NIST. Organizations are grouped in three categories: small, medium, and large based on survey responses. Small organizations include those with less than one hundred employees;
medium organizations include those with more than one hundred and less than five hundred employees; and large organizations include those with more than five hundred employees. Organizations from manufacturing, service, health-care, education, non-profit and government are compared using responses to BNQP self-assessment survey called “Are We Making Progress Yet”. The survey can be downloaded from NIST (2007) website at www.baldrige.nist.gov. This survey uses a five point Likert scale, and focuses on seven categories: leadership; strategic planning; customer and market focus; measurement, analysis, and knowledge management; human resource focus; process management; and business results.

The target population is all Arizona organizations, and convenience sample selection method (Stangor, 2007) has been to distribute surveys to selected organizations who have indicated interest in adopting QM programs. The surveys were distributed at various meetings such as AQA, ASQ, and through personal contacts. The sample size was 134 surveys from all Baldrige sectors: manufacturing, service, small business, education, healthcare, and non-profit sector. Responses to the surveys were compared across different Baldrige categories using box plots and analysis of variances, looking for differences in responses between categories, and for different organization sizes. In this way, a baseline for comparison has been established for other organizations starting their quality management programs. The charts in Figures 1 through 6 present the baseline results.

**Discussion**

This project is part of an ongoing program to study implementation issues and provide assistance to organizations seeking to improve their performance in the seven Baldrige areas of leadership, strategic planning, customer and market focus, information management, process management, human resources, and overall organization results. It is designed to be flexible and fit the needs of all sectors including manufacturing, services, small businesses, education, health care, and government/non-profits. Since it is based on a well-used survey instrument that is available on the NIST website, its results can indeed form a baseline for other organizations to use to compare their progress with other similar organizations.

**References Available Upon Request**
Category 1 Leadership

95% Confidence Interval on Mean Responses

2005 Baldrige Surveys

![Chart showing 95% Confidence Interval on Mean Responses for Category 1 Leadership]

**QUESCOD1**

0=no response, 1=SD, 2=Disagree, 3=Neutral, 4=Agree, 5=SA

Figure 1. Responses for Category 1 Leadership
Category 2 Strategic Planning &
Category 3 Customer & Market Focus

2005 Baldrige Surveys

Figure 2. Responses for Category 2 Strategic Planning and
Category 3 Customer and Market Focus

0=no response, 1=SD, 2=Disagree, 3=Neutral, 4=Agree, 5=SA
Category 4 Msmnt, Analysis & Knowledge Mgl

2005 Baldrige Surveys

QUESCOD4

0=no response, 1=SD, 2=Disagree, 3=Neutral, 4=Agree, 5=SA

Figure 3. Responses for Category 4 Measurement, Analysis, and Knowledge Management
Category 5 Human Resource Focus

2005 Baldrige Surveys

Figure 4. Responses for Category 5 Human Resource Focus

QUESCOD5

0=no response, 1=SD, 2=Disagree, 3=Neutral, 4=Agree, 5=SA
Category 6 Process Management

2005 Baldrige Surveys

QueScod6

0 = no response, 1 = SD, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = SA

Figure 5. Responses for Category 6 Process Management
Category 7 Organizational Results

2005 Baldrige Surveys

Figure 6. Responses for Category 7 Organizational Results