AN ANALYSIS OF THE BALDRIGE QUALITY PHILOSOPHY WITHIN THE STATE OF OHIO’S DEPARTMENT OF EDUCATION

DISSERTATION

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ABSTRACT

The Ohio Department of Education organization is evaluated relative to the Malcolm Baldrige Quality philosophy. After implementing this philosophy two years prior to the beginning of this study, the depth of the organization’s compliance with the philosophy is tested to provide insight on how the Malcolm Baldrige philosophy applies to an education service organization, and the time it takes to achieve the benefits of a top down commitment to total quality management. The findings of this study suggest that even though there is a strong commitment to total quality, and an improvement in the performance of the organization over time; the structure identified in the Malcolm Baldrige National Quality Award Application process has not been replicated in the Ohio Department of Education. The question of applicability is discussed as the Malcolm Baldrige education criteria does not completely capture the environment of an education service organization, nor does the service industry model fit the environment of this state agency.
DEDICATION

This work is dedicated to my family, Renee, Mitchell, Monika, Mae and Michael who provided the motivation and inspiration to complete the task after many challenging interruptions. I dedicate this work especially to the memory of Maureen E. Reid, my sister and Maury M. Reid Jr, my father, who were loyal and dedicated supporters of all my accomplishments and who I know are proud of the final product.
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CHAPTER 1

Introduction
The organization of the Ohio Department of Education (ODE or Agency) has been evolving over the last eight years in order to make a significant improvement in the performance of the agency. This research was undertaken to examine the efforts undertaken by the Operations Departments of the organization between 2004 and 2005 and the impact those efforts have had on the Agency’s internal and overall performance. In 2004 reorganization was initiated and is described by the ODE as “reengineering” motivated by the ideals of the Malcolm Baldrige North American Quality Award (MBNQA). The goal of the reorganization was to better align the organization’s structure with the principles presented in the MBNQA and to improve the agency’s performance both internally and on their customers.

In 2002 the Agency applied for The Ohio Award for Excellence. The feedback from the application review provides a reference for the Agency’s internal performance. The Ohio Award for excellence is a statewide award similar in design and process to the MBNQA, which is a national competition. This feedback identified a number of areas that need to be improved in order for the agency to be considered an
outstanding performer, both in the organizations ability to provide sustained excellent service to its customers and demonstrated ability to systematically identify and promote organizational learning to incorporate changing customer needs into the program.

With the possibility of the award as motivation and the feedback from the 2002 application as a reference, the reorganization process began at the ODE. This research documents the ODE’s reorganization by describing the process with case studies of changes within key departments. The ODE describes their reorganization as “reengineering” which is tested against the Hammer and Champy (Hammer and Champy 1993) definition of reengineering and the ideals of the MBNQA. Second the performance of the departments in the organization will be measured to identify the change in performance attributable to the reorganization.

Chapter one presents the background and motivation for this research and is organized into seven sections. After the introduction a brief review of the education system of Ohio in 2003 is presented (2a) with a discussion of why education is important, how the environment in which education is delivered is evolving and (2b) how the Ohio Department of Education (ODE) is responding to this changing environment. The next section introduces the concept of reengineering (3) and why this concept has been used in the ODE’s operating practices, followed by a discussion of the Malcolm Baldrige National Quality Award (4) and its application to process
improvements at the ODE. Section five provides an overview of alternative frameworks that could be used to study or improve quality and performance in an organization like the ODE and section six articulates the objectives and value of pursuing this stream of research. The last section of this chapter is a summary of the previous sections adding some generalizations of the concepts presented and rationale as to why they deserve the recognition provided in this research.

Education Background

The Significance of Education

The system of education generally used in the United States is a decentralized program involving up to four levels of training, preprimary (sometimes), elementary, secondary and post-secondary to students as young as 1 year of age and as old as 25 (Students older than 25 are also in the system, but are not included in the current study). This study targets the largest segments of these groups, elementary and secondary schools, which include grades kindergarten to 12. Education expenditures in the United States were an estimated $745 billion in the 2001-2002 school year, which represents about 7.4% of the US gross domestic product (GDP). To put this expenditure into perspective, based on 2001 GDP data from the Department of Commerce, Bureau of Economic Analysis, these expenditures would classify education as larger than the non-durable goods manufacturing industry, the wholesale trade industry or the combination of the mining, construction, agriculture, forestry
and fishing industries. Public education as an industry would be a little smaller than the retail trade industry or the transportation and utilities industry. In 2002 elementary and secondary school students numbered 47.7 million and 3.5 million teachers were engaged in their classroom instruction. The financial and human resources committed to education are a significant part of this nation’s economy and will continue to be an important part of the economy in the future.

The value received for this significant expenditure is often characterized as a well educated work force. More than 84% of the people 25 years or older had completed high school in 2001 suggesting that having a high school diploma is obtainable and a desirable achievement in the United States [US Department of Commerce, Bureau of the Census, Current Population Survey, unpublished data (DOE website)](Fronczek 2005). This education level makes the average worker more valuable to an employer and his/her increased income more valuable to the economy on local, state and national levels. In the Income, Earnings, and Poverty Data from the 2005 American Community Survey published by the US Census Bureau, it is reported that the median earnings of men (25 years and older) with less than a high school diploma is $22,138 and those with a high school diploma is $31,683. The economic value of having a high school education is clear from this data.

In the 2002-2003 school year the state of Ohio spent 14.56 billion dollars with nearly 66% of these expenditures used for instruction (55.9%) and pupil support (10.1%) for
the 1.8 million students attending elementary and secondary schools. This expense is larger than the value of the state’s agriculture industry and nearly equal to the state’s gross product from the motor vehicle and equipment industry. Based on Census Bureau data, it is about 4% of Ohio’s gross product.

Within Ohio, a significant amount of the state’s resources ($13.4 billion dollars) are committed to education, about 4% of the state’s gross product in 2003. This research is intended to provide some insight on the evolving efficiency that the state of Ohio has experienced in using its resources to provide elementary and secondary education to its 1.8 million students.

Education’s Evolving Environment in Ohio

The mission of the ODE has two components; the first is to improve the quality of education in the state; the second is to close the scholastic achievement gap between the low and high performers in the system by raising the performance of the low group. Accomplishing these objectives is complicated by constraints put upon the agency by federal and state legislators and the demands of local school board administrations and parents. These groups supply and consume the product of the school system (students) and participate in funding the education process.
The public education system of the United States is funded from three principal sources, the local community, the state and the federal government with each stakeholder group demanding accountability and some control over the operation of the school system. In Ohio, revenue for the elementary and secondary education system was generated from local, state and federal sources (taxes) at about 48%, 46% and 6%, respectively for the 2002-2003 school year. The ODE is the state agency responsible for distributing these funds to the school systems delivering education to students, which was $13.4 billion in the 2002-2003 fiscal year for elementary and secondary education.

The amount of money consumed by the education system creates a lot of interest and debate over how it is spent. A recent law imposed by the federal government, the “No Child Left Behind Act” (NCLB), is an example of the evolving environment in which the state department of education must function. This act requires more detailed reporting and testing of student achievement, the development of teacher performance standards and plans to meet standards across the system. The cost to the state of implementing this legislation is estimated to be as much as $1.5 billion per year when fully implemented. The tax rate has not been increased (yet) to provide the estimated funds required, and the federal government has increased its funding on a temporary basis by under $1.5 million. Accomplishing this objective with minimal change in revenue is one challenge that the ODE must meet. Other issues that are impacting the way schools operate include controlling violence and weapons in school and
changing population demographics that impact enrollment and revenue on a local and statewide basis. Macroeconomic issues like these must be addressed by the strategy employed by the education system in order for it to achieve its education mission.

ODE Response

One tactic that the ODE has used in response to the pressures of the evolving environment to be more efficient and effective is to “reengineer” some of its processes to increase the quality and efficiency of its service. An objective of their reengineering process was to better align the organization with the principles of the Malcolm Baldrige National Quality Award Criteria which stress results, leadership, planning, stakeholder focus, process management and measurement analysis. The criteria are described in more detail in a following section. The efficiency gains expected from the reengineering process and the emphasis on Malcolm Baldrige Principles were expected to help the organization meet its objectives of improving student performance in an environment where fewer resources are available.

Reengineering (Change)

Reengineering is a technique to redesign and implement a process that provides more value to the organization’s customers. It has gained popularity since the publication of the book *Reengineering the Corporation* by Michael Hammer and James Champy in 1993 (Hammer and Champy 1993) and it’s sequel *The Reengineering Revolution*
by Michael Hammer and Steven Stanton in 1995 (Hammer and Stanton 1995).

Change is included in the heading because reengineering is one method of creating change in an organization, change designed to improve the organization’s ability to perform; increased organizational effectiveness is the desired outcome, and reengineering is a method of changing processes to achieve the outcome.

The philosophy behind reengineering is that an organization’s structure and processes should be based on the needs of the customer. Hammer and Champy argue that many organization structures and process designs used by firms are based on concepts that were established generations ago in an era where the economy was growing so fast that demand consistently exceeded supply. This type of environment was much more tolerant of firms that sacrificed customer service for short term profit than today’s business environment. Today local and global competition has created a surplus of capacity for goods and services, forcing firms to provide higher levels of customer service or face losing market share and profit to their competitors. Customers have more suppliers willing to provide products and services to satisfy their needs than ever before; the resulting purchasing power generated by excess capacity causes sales and profit in the market to shift to the firm that can best satisfy the customer. This philosophy is not directly transferable to a state agency providing a public service, but the ODE has incorporated parts of the philosophy into their “reengineering” effort. This philosophy is not directly transferable because the ODE operates as a monopoly, sanctioned by the government, as the only agency charged with the task of
distributing public funds to other organizations to educate the society’s youth. In a monopolistic environment the threat of competition does not exist, and the forces pushing firms to provide better customer service are not as intense as they are in a more open competitive environment. Even with these differences the ODE has identified some aspects of this philosophy that can improve the performance of the agency and has worked to include these parts of the philosophy into their “reengineering” effort.

Reengineering was originally conceived and applied to organizations striving to make profit, and has since been successfully applied to non-profit and government organizations. A key component of the reengineering process is defining the customer, identifying their needs and exploiting the organization’s resources to satisfy these needs in efficient and effective ways. This step of customer identification is a challenging one for the ODE because of the complexity of their customer types. This complexity is discussed in the following section on the Malcolm Baldrige Quality Award.

Using a reengineering lens to examine change at the ODE is an appropriate way to assess the changes that have occurred, because it is the way the ODE characterizes the changes they have implemented. Reengineering can be described as a methodology to create new processes. The reengineering process requires a better understanding of customer requirements and is facilitated by technology that was not
available when the original process was created. The expected result is a radically different process which, when implemented correctly, results in significant (radical) performance improvement in the product or process being reengineered. This improvement could be based in the physical features of the product, the performance of the product or the cycle time used to deliver the product (from customer request to product delivery). One way to measure the effectiveness of reengineering is to measure system performance before and after the reengineered process is implemented. These performance measures would include measures of customer and employee satisfaction and changes in process throughput. A second method is to assess the changes that have occurred at the ODE and compare them to the theoretically prescribed steps of reengineering, as described in Hammer and Champy’s *Reengineering the Corporation* (1993).

The “Reengineering” literature emphasizes process redesign to effect change in manufacturing organizations and considers the implementation in a service or public sector organization as an extrapolation of the manufacturing system process. Consequently, the system process is not as well developed with theory or case examples outside of a manufacturing environment. Public sector examples are even fewer than in the service sector with less support and theory development. This research will examine the reengineering effort undertaken at the Ohio Department of Education to identify and document the changes in process and structure that have taken place. This research will document reengineering processes employed by the
ODE and compare it to the prescribed implementation process of Hammer and Champy.

Quality – Malcolm Baldrige Quality Award

Quality has long been an important ingredient in the composition of the success of a firm and the result of the processes that the firm employs. Academics have studied aspects of quality since the dawn of the industrial era, and have identified attributes of quality that play a significant role in the success of firms through each generation of industrialization. From the introduction of interchangeable parts in the Colt gun, through mass production assembly lines, to computer aided manufacturing and mass customization, defining quality has evolved to include expanding perspectives and characterizations of quality. The experience gained in manufacturing applications spilled over to services like insurance and banking as well as to public sector organizations that provide national defense, economic infrastructure and education. The definition of quality has evolved during these periods as well, from a perspective of one of a kind craftsmanship, to include user-based, manufacturing-based, value-based and system-based perspectives of quality. Over the last 15 years the use of quality awards and the Malcolm Baldrige Award in particular, have become popular as comprehensive benchmarks to identify organizations that instill a high quality, customer focused perspective throughout their organizations.
The seven components of the Baldrige Education Criteria (used to evaluate award applicants) are weighted to reflect their contribution to organizational quality with the most heavily weighted components being the Organization’s Performance Results, followed by Leadership. The remaining components Strategic Planning; Student, Stakeholder and Market Focus; Measurement, Analysis and Knowledge Management; Faculty and Staff Focus; and Process Management are weighted nearly equally.

The Baldrige Criteria is designed to be broadly adaptable by educational organizations with a focus on education delivery. It has been cited as a reference in the formulation of the reengineering design employed by the ODE, and the general award criteria was a model for the Ohio Award for Excellence.

While preparing the case studies for this research, particular attention is directed to the Leadership, Strategic Planning and Measurement components of the Baldrige Criteria. The rational for this focus is based on the environment in which the ODE operates, in particular:

1. The ODE physically operates two schools (state schools for the deaf), but has the responsibility to assist every elementary and secondary school in the state, requiring effective leadership and influence. The ability of the ODE to affect a change in student performance is rooted in its ability to influence the teacher
in the classroom and the administrators that function in positions between the
ODE and the teacher.

2. The complexity and number of the stakeholder groups and the time required to
determine the results of a specific action or program, magnify the significance
of the strategic planning area. For example standardized student testing only
occurs on an annual basis which makes the “official” feedback on changes
made to a process take at least one year. Repairs to improve a process would
then be considered and the cycle would repeat, after changes were made.

3. The ODE is the official repository of data and analysis pertaining to the
performance of students in the education system in Ohio and as such is “the”
state expert in measurement, analysis and knowledge management of
education systems. This characteristic directly relates to the measurement,
analysis and knowledge management component of the MBNQA.

The other four criteria, organizational performance results, student, stakeholder and
market focus, faculty and staff focus and process management are lower priority areas
because these areas are not the focus of the changes being implemented during the
time of the data collection and because these areas have a smaller (in theory) impact
on the areas where performance improvement is expected.
Customer Satisfaction

Determining customer satisfaction is a critical part of the Baldrige assessment process. Customer satisfaction is also used to facilitate performance measurement. For the ODE, defining the customer is a complex task that varies based on the issue being addressed, the location involved in the issue and on occasion the timing of when and what issue is being resolved. Within the education environment, the funding organizations, those that disburse collected taxes, (for example the state legislature) could be considered customers, yet their benefits are only indirectly realized. The students could be considered customers, but do not pay for the service they receive and in some cases do not have any appreciation for its value. Parents of students could be considered customers as monitors of the students and/or taxpayers contributing revenue to the education department. Future employers could be considered customers as they employ students after they end their student status, but their benefit can be enjoyed only after a significant period of time after the service is initiated. Similar arguments could be made for the individuals and businesses that pay school taxes, provide the products that can be purchased with the additional income a school graduate earns (compared to a non-graduate) and other groups. With this many stakeholders, how the ODE defines their customers and prioritizes the needs of the different customer groups should have a significant impact on organization structure and processes.
MBNQA History

The Malcolm Baldrige Education Criteria is a relatively new tool for education organizations, as it was introduced in 1995 and as of 2006 only 56 organizations have applied for the award. The four winners since then were on the end of the supply chain of delivering education, directly interacting with students. The MBNQA criteria have not been rigorously tested on an organization in the middle of the education supply chain. The Malcolm Baldrige framework provides a structure to measure the ODE’s process quality and performance to confirm whether the principles embedded in the criteria exist in the ODE (a premise claimed by the ODE) and if they do, do they make a difference; e.g. does Leadership, Planning and Measurement drive performance at ODE?

The MBNQA Education Criteria is biased toward direct service providers (schools, school districts) relative to distributors (ODE) who do not directly influence or interact with students. This bias is exemplified in the Baldrige Education Criteria, which identifies valuing faculty, staff and partners as a core value and expects senior management to create student focused, learning oriented climates (2005). [Page 1 of criteria] The application of the MBNQA criteria to an organization that does not deliver education but whose mission is to make the delivery of education more effective is a unique application of the criteria which is outside the current design parameters of the MBNQA Education criteria. An example of this emphasis is evident in that all of the early adopters of MBNQA philosophy and winners of the
award were school districts or schools. In an article promoting the adoption of the MBNQA process in February 2000, Peggy Siegel, the director of Business/Education Leadership Initiatives of the National Alliance of Business, claimed “The best thing about using the Baldrige is its potential for transforming education where it counts – in the classroom.” (Siegel 2000) For an organization that does not operate a significant number of schools, overcoming the emphasis in the evaluation system that focuses on education delivery is a difficult challenge.

Another way to examine the education system and the role of the ODE within it, is from a macroscopic perspective looking at the system of delivering education to students from revenue generation to in class activity and support. Using the MBNQA Framework a state department of education can be considered a support service in the delivery of education to students; alternatively it could be considered part of the information component of the MBNQA criteria. These perspectives are based on the role that the state department of education has in the education delivery system (education supply chain) of providing information, analysis and financial support to the school districts that deliver education to students. In either case, these alternative perspectives tend to reduce the theoretical effect that a state department of education would have on the dependent latent variable, student performance, because in the MBNQA Framework these components of the model account for only a fraction of the resulting product, in this case student performance.
This research will explore these perspectives, to identify if there is a correct perspective, based on how the ODE defines its mission and scope. A separate organizational goal was to better align the organization with the principles presented in the Malcolm Baldrige National Quality Award for Education Criteria, with the intent of improving the efficiency and effectiveness of the organization. This research will test the alignment of the ODE with the principles identified in the Malcolm Baldrige Education Criteria.

Alternative Frameworks to Study Quality and Performance Based Organizational Change

The Baldrige Framework is not the only one that can be used to assess the evolving process and product quality within the ODE organization.

The reengineering process as described by Hammer (1993, 1994) in its pure form, can be used to identify a framework and process that typical reengineering projects follow, with the expectation that adherence to the prescribed steps will enhance organization performance. (The ODE used a hybrid process combining reengineering with the MBNQA criteria.)

A similar guide for quality improvement can be developed using Deming’s points for Total Quality Management, as was done by Anderson, Rungtusanatham and
Schroeder (Anderson and Rungtusanatham 1994; Anderson, Rungtusanatham et al. 1995), who identified seven constructs of quality management: visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfillment and customer satisfaction.

James Quinn developed a theory on the service aspects of the economy which he describes in his book *The Intelligent Enterprise* (Quinn 1992), where he explores the growth of the US service economy and how firms need to be structured to satisfy the service needs in addition to the product needs of the economy. This theory is not prescriptive in terms of identifying an optimal organization structure, but does suggest ways that an organization can determine a new structure that will improve their performance.

Womack and Jones introduced the concept of “Lean Thinking” which is based on minimizing waste in the design and operation of an organization (Womack, Jones et al. 1990). Kaplan and Norton use a “Balanced Scorecard” to maintain a strategy focus to improve and maintain quality in an organization (Kaplan and Norton 1996).

These are a few of the perspectives that can be used to compare the initiatives taken by the ODE to the theoretical processes designed to improve the “quality” of the organization. The ODE chose to use “reengineering” and the MBNQA process. This research will compare the tactics employed by the ODE to the Hammer Quality
Theory to identify strengths and weaknesses of the methods used and then assess changes in organization performance using the Malcolm Baldrige National Quality Award Criteria for Education.

Research Objective and Value

There are two principle objectives of this research, which will contribute to the quality management stream of research.

The first is to document processes that the ODE used. This will enable a comparison between what was done and what the theory prescribes to classify and identify advantages or disadvantages caused by deviations from the theoretical process/structure. Documenting the process will also allow a comparison between the theories used and alternative theories to help understand organizational change. This objective could be classified as “testing theory” as described in Eisenhardt (1989). The process used by the ODE will be a benchmark for other state education departments striving to improve their efficiency and effectiveness.

A part of this objective is to test the generalizability of the Baldrige criteria by testing its applicability to the ODE, an education organization whose mission is not directly involved with delivering education to students. The use of this case to validate the generalizability of theory can be classified as theory building, because the research
will confirm the applicability of an existing theory to an untested environment (Yin 2003; Eisenhardt and Graebner 2007).

The second objective is to assess the performance of the ODE to determine if the organization changes implemented make a difference in the performance of the organization. The identification of process components that contribute to improved performance and the identification of effective performance measures that can be used by other agencies is a significant product of this research. Internal performance is assessed in the cases by identifying department process improvements and employee perception changes.

Summary

While there is increasing interest in applying business management practices in education organizations to improve efficiency and performance, little has been published in the business literature about education quality improvement applications. Literature in education journals tends to discount business methodology due to environmental differences between business and education settings. This research seeks to include the environmental context into the research by examining the adaptation of the “business practice” of reengineering in an education environment. The experience of the ODE and the application of business theory to their process and outcomes will provide insight into the generalizability of the “business process”
reengineering to an important service organization in the middle of the education supply chain.

In addition, this research provides an assessment of the performance measurement system used by select departments within the ODE relative to their expressed needs. In an environment with such a complex customer and revenue base, utilizing effective and efficient performance measures can be a great advantage in justifying the agency’s actions to its customers and the public.

The Malcolm Baldrige Quality Award Criteria has been a significant motivational force driving the concept of the reorganization at the ODE. The ability of an organization like the ODE to be able to internalize and benefit from the theory of the MBNQA is an extension of knowledge because it has not been documented before. The components of MBNQA will be emphasized and contribute to the understanding of the effective management of this organization.
CHAPTER 2
LITERATURE REVIEW

“Performance of Management should be measured by potential to stay in business, to protect investment, to ensure future dividends and jobs through improvement of product and service for the future.” W. E. Deming, Out of the Crisis: Quality Productivity and Competitive Positioning, (Deming 1986)

As introduced in the previous chapter, the Malcolm Baldrige Award Criteria is a key motivating factor of the changes made at the Ohio Department of Education (ODE). This chapter begins with a discussion of the Baldrige criteria as applied to education. Following the Baldrige sections are sections describing how total quality management, reengineering and balanced scorecard theory can be used to describe the context of how management has made changes to the processes used by the ODE to improve the achievement made by students in the public education system. The literature review draws on four frameworks that are often used to implement performance improvement in organizations: The Baldrige Quality Framework, Total Quality Management, Balanced Scorecard, and Reengineering. A description of the approach in each framework is presented and ways in which the research is complimentary or useful to the objectives of this study is discussed from the perspective of a non-profit government agency.
Malcolm Baldrige Quality Framework

The Malcolm Baldrige National Quality Award (MBNQA) was established in 1987 by an act of congress and is administered by the National Institute of Standards and Technology (NIST). The criteria for education was developed in 1995 and formally added to the Baldrige criteria in 1998. There are seven criteria: 1) Leadership, 2) Strategic Planning, 3) Student, Stakeholder, and Market Focus, 4) Measurement, Analysis and Knowledge Management, 5) Faculty and Staff Focus, 6) Process Management and 7) Organizational Performance Results. The goals of the Baldrige criteria are to help organizations use an integrated approach to organization performance management that result in:

1) Delivery of ever-improving value to students and stakeholders, contributing to education quality

2) Improvement of overall organizational effectiveness and capabilities

3) Organizational and personal learning

The Malcolm Baldrige National Quality Award (MBNQA) criteria has been used by many organizations to assess their process for improving performance and has been studied by many researchers to validate the theory supporting the criteria. The criterion collectively creates a framework that defines a concept of quality. Garvin in the Harvard Business Review characterized the Baldrige Framework as “the most important catalyst for transforming American business”¹ (Garvin 1991) and many state, local and international awards have been modeled after the Baldrige award

¹ Garvin, 1991; page 80
process. (Ettore 1996 (Bolisani and Scarso 1996), (DeBaylo 1999)) Such widespread imitation indicates a perception that it has both validity and generalizability as a theory (Townsend and Gebhardt 1996 (Townsend and Gebhardt 1996)). Flynn, Schroeder and Sakakibara (Flynn, Schroeder et al. 1994) note that the “use of the Baldrige criteria is a way of judging the face validity of any framework which might be proposed for quality management.” They go on to validate each of the dimensions of the Baldrige Framework based on the literature published to that time and conduct a survey of manufacturers confirming the theory.

In his Letter of Introduction to the 2004 Criteria, Dr. Hertz, the Director of the Baldrige National Quality Program stated “the Baldrige criteria have been used by thousands of US organizations to stay abreast of competition and to improve performance.” (2004) He attributes the criteria with helping organizations respond to current challenges like creating value for customers and suggests that these criteria can be easily integrated with other approaches to performance improvement like the balanced scorecard.

When the Baldrige model was developed, teams of researchers tested the theory supporting the framework; each time the model was revised, it was tested again to insure that the changes improved the validity and the reliability of the model. One approach to testing the theory is to use the framework to detail the concept of quality management. Flynn and Saladin (Flynn and Saladin 2001) take this direction and
identify a segment of Baldrige research that uses the framework as a means of defining and implementing quality management as an ongoing part of operating an organization. Some of the authors identified by Flynn and Saladin who have validated the Baldrige Criteria (or part of it) are listed in the following Table:

<table>
<thead>
<tr>
<th>Author – Year of Publication</th>
<th>Topic of Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evans and Ford, 1997</td>
<td>Compared MB* core values to criteria processes</td>
</tr>
<tr>
<td>Dellana and Hauser, 1999</td>
<td>Assessed quality management based on MB* criteria; related to organizational culture with the competing values model</td>
</tr>
<tr>
<td>Dow, Samson and Ford, 1999</td>
<td>Questionnaire using the MB* criteria items to identify/measure organization quality</td>
</tr>
<tr>
<td>Handfield, Gosh and Fawcett, 1998</td>
<td>Questionnaire using the MB* criteria items to identify/measure organization quality</td>
</tr>
<tr>
<td>Samson and Terziovski, 1999</td>
<td>Used the MB* framework to categorize elements of TQM (Total Quality Management)</td>
</tr>
<tr>
<td>Ford and Evans, 2000</td>
<td>Detailed analysis and support of content in Strategic Planning category of MB* criteria</td>
</tr>
</tbody>
</table>

* MB – Malcolm Baldrige

Table 2.1
Baldrige Literature: Validating the Framework for Measuring Quality Management

The commonality shared by these articles is that they use the Baldrige Framework to effectively quantify “quality” in organizations. Other examples include Wilson (Wilson 1997) who empirically tested the 1995 MBNQA Framework in fifteen industries to identify the relationship between the Baldrige Principles and performance (customer satisfaction and financial performance) and found that the
model explained approximately one half of the variance in the performance variables. In particular the importance of information and analysis on manufacturing system performance to explain performance variance was a key finding that relates to the environment of the Ohio Department of Education (ODE). In 1998 Meyer empirically tested the Baldrige Health Care Criteria in 228 hospitals concluding that the Baldrige theoretical model was validated by a representative sample of all the hospitals in the United States (Meyer 1998). This result supports the concept that the criteria apply to both profit and not for profit environments. Both Wilson (1997) and Meyer (1998) found:

1. Leadership drives the system and causes results.

2. The MBNQA causal model is a recursive system of performance relationships.

3. Information and analysis is statistically the second most important Baldrige category and influences four other categories.

4. The influence of leadership on information and analysis is approximately twice as strong as leadership’s influence on the other Baldrige system categories.

5. The Baldrige category of process management is approximately twice as important when predicting customer satisfaction, as are the other Baldrige system categories.

6. Strategic planning does not have a statistically significant direct causal influence on performance.
In 2002, Collier, Goldstein and Wilson studied the evolution of the Baldrige framework comparing three versions of the model released 1987, 1992 and 1997, their conclusion was that the 1992 structural equation (causal) model was a better model because it more explicitly describes how theory is defined in the framework, making the model easier to apply (Collier, Goldstein et al. 2002). Flynn and Saladin (Flynn and Saladin 2001) also tested the evolution of the framework, basing their analysis on the constructs used to generate the model, concluding that all the frameworks were a good fit with the Baldrige model and improved with each revision. They comment “these findings are important because the Baldrige Framework specifies cause and effect implying which practices will lead to various desired outcomes”.

Other researchers who have tested the validity of the MBQNA framework and concluded that the framework does explain performance variance include Keinath and Gorski (Keinath and Gorski 1999), Pannirselvam et al (Pannirselvam, Siferd et al. 1998), and Pannirselvam and Ferguson (Pannirselvam and Ferguson 2001). These three studies used industry cross section data of organizations that applied for state quality awards. Ford and Evans (Ford and Evans 2000) and Evans and Ford (Evans and Ford 1997) also supported the framework. Wilson and Collier (Wilson and Collier 2000) based on research in Wilson’s dissertation supported the framework and extended the discussion to include the impact of leadership indirectly driving
performance results. Winn and Cameron (Winn and Cameron 1998) reached conclusions similar to Wilson and Collier (2000) in one of the early applications of the framework to an educational organization.

There is substantial evidence supporting the position that the Baldrige Criteria is an effective way for organizations to examine quality concepts as implemented in their organizations and then use this information to improve organization performance.

Baldrige Validity

A second component of the Baldrige literature tests the relationship between the financial performance of an organization and the application of the Baldrige framework. If the Baldrige framework is a valid method to improve quality, research should support the relationship between application of the framework and superior organizational performance. Results in the literature have characterized performance in terms of customer satisfaction, increased productivity, worker satisfaction, customer service, competitiveness, employee quality of work-life, and lower turnover and/or absenteeism; terms that are not financial. Given the premise that firms exist to achieve their goals and a product of achieving these goals is often a financial profit, the Baldrige criteria should be positively correlated to profit and other traditional financial performance indicators.
As the Baldrige Framework evolved from 1988 through 1997 the measured outcome evolved from customer satisfaction to business results, which remains a key outcome of the model today. The current Baldrige Model for Education is depicted in Figure 2.1; which shows the significance of organizational results in the model and also includes two feedback loops from organization performance to leadership, one through measurement and analysis, and the other through the organizational profile. Along with the change in the characterization of the outcome of the model there has also been a change in the scoring system, with more weight put on organizational results; from 180 points (for customer satisfaction) in 1994 to 450 points (for business results in 2004).
The motivation for this change, articulated by Jerry Bowles (Bowles 1992) during a debate about the Baldrige Criteria is that “the ultimate test of quality is not the Baldrige Award but happy customers who vote their preferences at the cash register. Financial performance simply cannot be ignored as a criterion for winning the Baldrige. Until the results of quality improvement efforts are integrated into overall financial reporting and accounting systems, rather than being tracked and reported on their own, quality will not become a full partner in the strategic planning process.”
These statements identify a gap between the theoretical and practical perceptions of quality. A number of authors have worked to fill this gap, for example, Crosby’s book *Quality is Free* (Crosby 1979) and Parker’s *Achieving Cost-efficient Quality*, propose theory that relates the cost of implementing quality improvement programs with the financial benefits of their implementation.

Part of this gap in analysis and understanding is caused by the administration of the Baldrige program itself, because critical comparative information, namely the application, scores and examiners evaluations of all companies that have applied, even the winners, are not publicly available. Consequently there is little systematic study of applicants that can be applied to general industry. Even though Baldrige award winners are required to share their experiences publicly and are touted as role models and benchmarks, they are not required to disclose their application and evaluation data.

A product of this gap has been the erroneous generalization of bad anecdotal experiences. These examples were created by an assortment of causes but are not representative of the quality management processes employed at the company. The most infamous anecdote being Houston’s Wallace Company, which went into chapter 11 bankruptcy after winning the award. Other notable disappointments include Xerox (1989 winner) and Corning (1989 finalist) for the money expended to prepare the
application and conduct site visits for the Baldrige evaluation, without recording
significantly improved financial performance. The Cadillac division of General
Motors is another example; they won the award in 1990 yet none of the major new
car rating polls listed them in the top tier of high quality new cars for the 1990 model
year.

The facts explaining these anomalies are not as memorable or as easy to communicate
as the failure sound bite; but these occurrences do demonstrate that the Baldrige
criteria and the framework may not be overall management excellence awards.
Garvin (1991) points out that there are multiple paths to profitability in addition to
superior quality management (e.g. a patent, a proprietary production process,
effective marketing, cost leadership, innovative research and development) that are
not in the Baldrige framework. Similarly, these paths can reduce financial
performance (e.g. design problems, depressed demand, international difficulties
{exchange rates, theft, etc.}). The Baldrige Award is positioned in between a
narrowly defined production, service or quality control award and an all-
embracing management excellence award.

The literature relating financial performance to Baldrige performance has been slow
in developing, partially because of unavailability of data as mentioned earlier by
Garvin. To fuel this discussion the National Institute of Standards and Technology
(NIST) has tracked the performance of Baldrige award winning companies and
compared their performance to the Standard and Poor’s 500 and the results have been that between 1993 and 2003, Baldrige winners have out-performed the S&P 500. In 2002-2003 the Baldrige winners’ portfolio underperformed the index, which was explained by Dr. Hertz as the result of recipients being concentrated in the technology industry. As an industry segment, the technology segment underperformed the S&P 500. This analysis was conducted over a ten year time frame beginning after the award was announced; for winning organizations that are subsidiaries of larger companies, the portfolio investment was weighted based on the percentage of employees in the winning unit relative to the entire corporation. While the choice of time period and investment weight can alter the comparison, the pertinent deduction is that there is a difference in performance of firms that effectively implement and maintain quality practices.

Anecdotal evidence of this proposition is reported by Daniels (Daniels 2004) in a review of award winners Caterpillar Financial Services and Boeing Aerospace Support. A second, non-scientific study by the United States General Accounting Office (1991) did provide financial performance and analysis on twenty two Baldrige finalists and winners concluding that the winning/finalist group had increased market share, sales per employee, return on sales and return on assets. More rigorous scientifically sound analysis of the financial benefits of using the Baldrige Framework is sparse in the quality literature. The most common approach to relate

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2 NIST News Page; http://baldrige.nist.gov/stock_studies.htm
performance to framework implementation is to use winning the award as a qualifier to indicate a superior level of total quality management practices.

Hendricks and Singhal (Hendricks and Singhal 1997), use an event study approach to show that firms that win quality awards perform better than matched “control firms” on operating income based measures. The authors use the award as a proxy for the effective implementation of total quality management programs, and the date of the award announcement as the event that initiates the analysis period. This study used secondary data (public financial data on the subject companies) to identify long-term (ten years) effects of superior Total Quality Management (TQM) programs. They justify using award winners to qualify firms as exemplars in quality because:

1. Award providers have the objective of recognizing firms that do an outstanding job of implementing TQM programs.

2. Award providers have strong incentives to give awards to firms that have significantly improved “quality” in an effective manner. To do otherwise would jeopardize the creditability of the award.

3. A third advantage to their method is that the awards used in the analysis did not include financial performance in the award selection process. This allows financial performance to be independent of the award process.
The result of the analysis identified a statistically significant difference between firms that had won a quality award and those that had not won an award, with the award winners outperforming the others. These results were confirmed by the findings of Easton & Jarrell (Easton and Jarrell 1998) and reached similar conclusions as Deloitte & Touche and CEEM Information Services “Quality Systems Update 1993”; International Business Machines “Quality Management Update” (1993) and Fitzgerald and Eldmann (1992). These studies all described the performance advantage earned by award winners compared to other firms.

In summary there is evidence that winning the Baldrige Quality Award is correlated to improved performance, perhaps because procedures and systems are in place that allow a firm to outperform other firms in their industry. The caveat is that performance in this context is broadly defined and including at times operating performance measures and/or (but usually not both) financial performance measures. More research needs to be conducted to refine these broad generalizations into more specific results.
Baldrige in Education

The discussion of the previous section was based on research performed in the business and healthcare segments of the economy. In 1998 when the Baldrige criteria was extended to healthcare it was also extended to education. Since this introduction, all of the education category award winners have been schools or school districts that deliver education directly to students. When asked if a service provider like the ODE could win this award, the director, Harry Hertz commented that this award was for education organizations that interacted with students and that other organizations are not eligible. This does not mean that the theory and principles driving the Baldrige Criteria would not apply to these other organizations, only that the Baldrige Award administrators are not convinced that an education service organization can demonstrate organizational change that benefits their customers and also benefits students.

Since the creation of the education category, nineteen educational organizations applied for Baldrige recognition; in 1996 and 1997 during the pilot study of the Baldrige Education Criteria, their applications showed a strong similarity to the applicants in the health care category. The administrators of the award modeled both the health care and education criteria after the service sector award category, leveraging the validity and reliability of the existing criteria into these segments of the economy (Diamondstone 2000). The timing of the introduction of the Baldrige Education Criteria meshed well with the general environment in the country that was determined to find ways to improve the education systems in this country. By 2000,
40 states had adopted student performance standards and 9 others were close to adopting them; many of these states were implementing assessments to track the progress in meeting standards while creating rewards and consequences for achieving (or not) standard performance. Siegel (Siegel 2000) in an article describing the advantage of using the Baldrige Framework commented “educators are demonstrating the value of Baldrige by using the criteria as an organizational assessment tool to improve student and system performance.” She went on to describe three examples of school systems (North Carolina, Freeport, TX and Tampa, FL) that were more successful in delivering education to their students and had applied for a quality award to demonstrate the impact of high quality educational processes. Each of these education systems began implementing the Baldrige Criteria in the 1990s. By the end of the decade North Carolina and Texas led the nation in student performance gains during the nineties. “Forty-five North Carolina school districts representing 70 percent of students statewide have voluntarily joined a partnership focused on implementing a Baldrige-based improvement strategy.”3 In the Brazosport Independent School District in Freeport Texas, from 1997 to 1998 more than 92 percent of a very economically and ethnically diverse population passed state reading, math and writing tests, representing an 80 percent gain in some schools. Pinellas County Schools in Florida was ranked number 1 in the state in 1998 based on multiple student performance measures; they credit students being taught to assume responsibility for their own learning as key to their success. Educators in this

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3 Siegel 2000, page 67
community considered the Baldrige criteria as a reclamation tool that focuses on accountability and provides a way to align the programs and initiatives used in the district. Siegel defined a key component of the solution of the problems hindering student achievement as one of accountability, and characterizes the Baldrige Framework and Criteria as an accountability model, that can be used to guide an educational organization to a higher level of performance.

It is clear from these examples that the Malcolm Baldrige National Quality Award has been used to improve performance of a school system, resulting in higher achieving (based on standardized tests) students.

Arif and Smiley (Arif and Smiley 2003) come to a different conclusion after a theoretical review of Baldrige and other “TQM – like” programs. They found that on a macro level the use of the criteria and framework is good, but on a micro level teachers were not able to effectively implement them. Some of the obstacles that the “management system” would have to overcome to be effective in an education organization include:

1. Support from the liberal arts community to implement the (any) management system. (Getting the commitment to use the system outside of the administrative/business areas of the organization)

2. Communicating the goal of education as either a pursuit of understanding or a job placement service.
3. The inclusion of individual preferences of teachers, personal teaching and research into the management system.

4. A universally accepted (within an organization and its environment) definition of customer, producer and market.

5. The variability of the student “raw material” entering the education process requires an equally broad tolerance of the systems products, and procedures used to create the graduates. This implies that teachers’ processes could vary or even oscillate on a daily or other time period to facilitate student learning.

These obstacles highlight the differences between a rigid and a flexible management system. These diverse types of obstacles in a large organization would require a flexible quality system to be most effective. The advantage of a “rigid management system” is that it creates an excellent baseline for feasibility or future analysis and establishing curricular, staff and marketing needs. This type of information can also be used to motivate staff. The MBNQA Framework is a flexible system of assessing organizational effectiveness. The challenge is utilizing the flexibility so that all of the stakeholders can use and support the results of this management tool.

Arif and Smiley (Arif and Smiley 2003) characterize the information and analysis component of the criteria as the “backbone of the whole Malcolm Baldrige Award System” which is inconsistent with the way applicants are judged. The information and analysis component is given a 9% weight in the MBNQA (2004) scoring
framework. A very strong relationship between leadership, information and analysis and results is easy to envision, because better decisions can be made with better quality information and analysis. Better analysis comes from having accurate results and information from the marketplace, but the authors make no attempt to justify this characterization.

Unfortunately there is not much literature focusing on the Baldrige Framework in education, and significantly less empirical work on the impact of the Baldrige framework on educational organizations. It appears that the validation and reliability accorded to the Baldrige Framework in the business and healthcare categories has carried over into the education category, as research articles testing these concepts in an education context are not available.

Total Quality Management

In the previous section, a number of authors were referenced who used the Baldrige Framework to define Total Quality Management (TQM) in an organization. Beginning with a definition of TQM, in this section the concept of TQM will be reviewed and alternative ways to apply TQM concepts to the Ohio Department of Education will be explored.
Researchers have approached TQM in a number of different ways in a variety of publications, with the volume or articles peaking in the early 1990s. Examples include Flood (Flood 1993), Flynn, Schroeder and Sakakibara (Flynn, Schroeder et al. 1994), Cole (Cole 1995) and Ross (Ross 1993). These researchers had a number of common themes in their definitions that included: customer focus, employee involvement and continuous improvement all used to achieve sustained quality or performance improvement.

R.L. Flood identified ten principles of TQM in the book *Beyond TQM* (1993) which were:

1. There must be agreed requirements, for both internal and external customers.
2. Customers’ requirements must be met first time, every time.
3. Quality improvement will reduce waste and total costs.
4. There must be a focus on the prevention of problems, rather than an acceptance to cope in a fire-fighting manner.
5. Quality improvement can only result from planned management action.
6. Every job must add value.
7. Everybody must be involved, from all levels and across all functions.
8. There must be an emphasis on measurement to help to assess and to meet requirements and objectives.
9. A culture of continuous improvement must be established (continuous includes the desirability of dramatic leaps forward as well as steady improvement).
10. An emphasis should be placed on promoting creativity.
Flynn, Schroeder and Sakakibara (Flynn, Schroeder et al. 1994) see quality management as “an integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels and in all functions of the organization, in order to meet or exceed customer expectations.” They consider quality management a key element in the approach to achieving and sustaining a competitive advantage. Robert Cole in The Death and Life of the American Quality Movement (Cole 1995) describes TQM as a generic theory comprised of many interrelated elements capable of delivering sustained competitive advantage. Within this theory there are a succession of efforts (called “mini-fads”) that comprise the incremental improvement or evolution that must occur for quality progress to be achieved. Examples of these steps include quality control circles, statistical process control, benchmarking, concurrent engineering, continuous improvement, Baldrige diagnosis, ISO 9000, quality function deployment, management by policy (Hoshin planning), six sigma and business process re-engineering; TQM should incorporate the lessons from each step and include them into the overall efforts to drive organizational transformation.

Powell (Powell 1995) based on Ross (1993) Total Quality Management Text Cases and Readings, ST. Lucie Press, DelRay Beach, FL, describes TQM as “an integrated management philosophy and set of practices that emphasize, among other things, continuous improvement, meeting customer requirements, reducing rework, long range thinking, increased employee involvement and teamwork, process redesign,

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4 Flynn, Schroeder and Sakakibara, 1994; page 342
competitive benchmarking, team based problem solving, constant measurement of results and closer relationships with suppliers.” These practices result in improved products and services, reduced costs, more satisfied customers and employees and improved bottom line performance (Walton 1987). Others see TQM as “a management system in continuous change, which is constructed of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources.” Hellsten and Klefsjo (Hellsten and Klefsjo 2000), Hanssen and Eriksson (Hansson and Eriksson 2002).

One of the seminal researchers of quality, W. E. Deming emphasized statistical understanding, and data based decisions to improve the quality of management, which Fitz-Gibbon (Fitz-Gibbon 1997) called applying the “scientific method.” The characteristics of the scientific method include:

1. A reliance on evidence as opposed to authority
2. The collection of high quality quantitative data
3. The open circulation of information in order to subject both the data and the methods to criticism and evaluation
4. The accumulation of knowledge

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5 Powell 1995, page 16
Deming advocated using the scientific method in conjunction with fourteen points for management, which provides a systemic functional logic that prioritizes the initiatives an organization should take to improve.
Deming’s 14 Points for Management

1. Create constancy of purpose to improve product and service.
2. Adopt a new philosophy for the new economic age with management learning what their responsibilities are, and by assuming leadership for change.
3. Cease dependence on inspection to achieve quality by building quality into the product.
4. End awarding business on price. Award business on total cost and move toward single suppliers.
5. Aim for continuous improvement of the system of production and service to improve productivity and quality, and to decrease costs.
6. Institute training on the job.
7. Institute leadership with the aim of supervising people to help them to do a better job.
8. Drive our fear so that everyone can work effectively together for the organization.
9. Break down barriers between departments. Encourage research, design, sales and production (main organizational functions) to work together to foresee difficulties in production and use.
10. Eliminate slogans, exhortations and numerical targets for the workforce since they are divisory. Difficulties belong to the whole system.
11. Eliminate quotas or work standards, and management by objectives or numerical goals; leadership as declared in #7 should be substituted instead.
12. Remove barriers that rob people of their right to pride in their work.
13. Institute a vigorous education and self-improvement program.
14. Put everyone in the company to work to accomplish the transformation.

Table 2.2 Deming’s 14 Points for Management

Fundamentally, whether a philosophy, system or a process, TQM is a broad multifaceted concept incorporating all the levers management can apply to an organization to enhance the consistency of the organization’s output in satisfying the customer.
TQM in Practice

While these views have a lot in common, there are small differences, which each author has used to make their measurement model of “Total Quality Management” distinct from the others.

Flynn, Schroeder and Sakakibara (Flynn, Schroeder et al. 1994) conceptually depict quality management as a gestalt composed of top management support, quality information, process management, product design, workforce management, supplier involvement and customer involvement that interacts with just in time, manufacturing strategy, technical management, human resource management and top management support in an environment of continuous improvement to achieve and sustain competitive advantage. (See figure 2.2) This figure was designed to show their view of how quality management is a key element in the World Class Manufacturing approach to a competitive advantage.
Relationship of Quality Management to dimensions of World Class Manufacturing

A key outcome of their work was to develop scales that could be used to measure the dimensions of quality management. The scales developed were customized to three industries (transportation components, electronics and machinery) and targeted to different respondents in a plant (labor and management). The “core dimensions” of the scales are the components of the gestalt model noted above (figure 2.2) which are
similar to the Baldrige Criteria. The scales developed were shown to be valid and reliable in their sample.

Powell (1995) also developed scales in his effort to link TQM implementation to performance and defined the TQM factors as: executive commitment, adopting the (quality) philosophy, closer to customers, closer to suppliers, benchmarking, training, open organization, employee empowerment, zero defects mentality, flexible manufacturing, process improvement and measurement. In assessing the philosophy of TQM, one of the questions asked was if a Baldrige Award was applied for, which implied that applying for the award is correlated to TQM implementation. This type of measure has been used subsequently by other researchers as an indicator of TQM implementation.

Anderson, Rungtusanatham, Schroeder and DeVaraj (Anderson, Rungtusanatham et al. 1995) defined TQM using the categories visionary leadership, internal and external cooperation, learning process management, continuous improvement, employee fulfillment and customer satisfaction. These three examples are representative of the way TQM has been analyzed in empirical studies assessing the use and impact of TQM in organizations. They all can trace their foundation to the teaching of Deming and his 14 points for management. Robert Cole (Cole 1995) observed that “there is a great deal of confusion about the critical ingredients of total quality management” and that there is constant pressure to give a generic formula for

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6 Cole 1995, page 3
quality success. Even with the pressure to simplify and implement quality throughout the economy not every organization has had a successful experience implementing TQM. Even the failures provide lessons from which the success factors of quality could be identified and collected for the benefit of those still struggling to put an effective quality program into place. Cole used this approach when identifying TQM success factors (see table 2.4) which are moderated by a wide range of implementation activities and mediated by environmental factors like industry, size, technology, length of product cycle, competitive environment, type of customers and the unique history of a given organization. While it is beyond the scope of this effort to characterize the key theoretical elements of TQM as it applies to an organization like the ODE, it is important to recognize that there are choices available to moderate the way in which quality is defined and measured that should be specific to the industry and organization being studied. In the ODE’s implementation of TQM, the characteristics that play a significant role are: management commitment, employee involvement, an emphasis on measurement to set and meet objectives and continuous improvement. Implementation is being moderated by issues like the union’s support of the organizational changes being made, the perceived speed that physical relocation of personnel is taking and the access to better quality data provided by the department’s databases. Implementation is being mediated by factors like the frequency of student exams used to report progress to employees and other stakeholders, the department budget approved by the state legislature and the reporting requirements of the federal government.
TQM: Elements of Success

- Sustained top-management leadership for the quality initiative and active application to their own daily management activities
- A relentless focus on the customer, both in setting strategic objectives and building organizational routines that strongly link all units and levels in the firm as well as firm suppliers and distributors in identifying and meeting customer needs.
- Systematic improvement of the quality of all business processes from an internal and external customer perspective.
- Decentralization of decision-making responsibility to a well-trained problem-solving labor force (i.e. employee participation in decision making)
- A breaking down of organizational barriers between departments and levels so that cross-functional management becomes normal operating procedure
- A combined emphasis on incremental continuous improvement and breakthrough strategies that is strongly linked to competitive objectives
- Realignment of reward and measurement systems, both formal and informal to support these new directions
- A decentralized information and decision support system (management by fact) that provides data to a broadly defined set of “players”

The Death and Life of the American Quality Movement, Robert Cole, Oxford University Press 1995, page 4

Table 2.4 TQM Elements of Success

TQM Effectiveness

With an ample history of researchers validating the concept of TQM, the question of interest evolves to “how does the implementation of TQM effect the organization applying it?” This section of the research presents a sample of the research in this area, which is summarized in Table 2.5. Powell (1995) found a correlation between TQM and organizational performance, although performance was measured
subjectively by the survey respondents and defined relative to respondent selected competitors.

Hendricks and Singhal (Hendricks and Singhal 1997) in their ten year event based study supported the hypothesis that firms that have effectively implemented TQM generate significantly better (more) operating income and sales growth than firms that have not effectively implemented TQM. They also found that these firms seemed to be better at controlling costs.

Lemak and Reed (Lemak and Reed 1997) reached similar conclusions and also used a long time period (five years) defining performance as profit margins and market and risk adjusted stock market performance. Their analysis supported conclusions reached by Dean and Snell (Dean Jr. and Snell 1996) and the International Quality Study by Ernst and Young and the American Quality Foundation (1992). Lemak and Reed used a very broad definition of TQM relative to the other researchers referenced in this section and made no attempt to account for the effectiveness of TQM implementation.

Agus and Sagir (Agus and Sagir 2001) tested the performance impact of TQM implementation of Malaysian firms, concluding that “TQM practices have an indirect impact on financial performance mediated by competitive advantage; Hansson and Eriksson (Hansson and Eriksson 2002) reached similar conclusions in a study of Swedish companies, using a Swedish quality award receipt as the indicator of TQM effectiveness. Their method was modeled on (Hendricks and Singhal 1997). The
financial indicators they used were percent change in sales, return on assets, return on sales, percent change in total assets and percent change in number of employees over a seven-year period. The difference between Hansson and Eriksson and many other studies is that Hansson and Eriksson did not identify a significant performance difference between the control and the award winning segments until after the award was announced. This finding is inconsistent with the theory because TQM practices are not instantaneously implemented and should be gradually reflected in performance results as implementation expands. The question of when a quality award winner’s performance exceeded that of their peers was considered by York and Miree (York and Miree 2004) to identify if TQM practices were the cause of the improved performance; their finding could not demonstrate causation but did identify a covariance between use of TQM practices and improved performance.

Over the period of time that TQM has been studied, it is apparent that there is some positive relationship between TQM implementation and performance, but a broad interpretation of what TQM is, how implementation is characterized and how performance should be measured are important variables in identifying the significance of the relationship.
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Dependent Variable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powell (1995)</td>
<td>Organization Performance</td>
<td>Subjective, self reporting company information 12 dimensions of quality</td>
</tr>
<tr>
<td>Hendricks and Singal (1997)</td>
<td>Operating Income, Sales Growth, Net Sales, Cost of Goods Sold</td>
<td>Objective financial data; Winning Quality Award as indication of good TQM practices</td>
</tr>
<tr>
<td>Lemak and Reed (1997)</td>
<td>Profit Margins</td>
<td>TQM firms identified by key word(s) used in the presidents letter in the annual report for 5 consecutive years (1989-1993)</td>
</tr>
<tr>
<td></td>
<td>Stock Market Performance</td>
<td></td>
</tr>
<tr>
<td>Agus and Sagir (2001)</td>
<td>Financial Performance</td>
<td>Five indicators of TQM, self reported with 1 respondent/firm</td>
</tr>
<tr>
<td></td>
<td>Total assets, Net profit, Turnover/employee</td>
<td></td>
</tr>
<tr>
<td>Hanson and Eriksson (2002)</td>
<td>Percent change in sales, Return on assets, Return on sales, Percent change in number of employees</td>
<td>Swedish Quality Award Winners indicate good TQM practices</td>
</tr>
</tbody>
</table>

Table 2.5 Articles on TQM Effectiveness

TQM applied to the ODE

The majority of the research conducted on TQM practices is focused on profit seeking manufacturing organizations. There is a smaller amount of research published
on service organizations. Relatively little is published on government organizations and educational organizations. Swiss (Swiss 1992) presents a theoretical argument of why TQM theory is not readily transferable to a government agency. Key issues include: the difficulties of specifying customers, adapting the product perspective to a service and incorporating politics into the analysis. These arguments are used by Arif and Smiley (Arif and Smiley 2003) as discussed in the Baldrige Quality Framework section {Pages 39 – 40}. An argument can be made that the variables that are not well defined in TQM theory are more difficult to specify in a government and education setting. These variables include: how to approach TQM, the effectiveness of implementation, and how to measure performance. These issues seem to have discouraged research that applies TQM to an educational organization from a business perspective.

As more research is directed toward service industries and a consensus about approach and terminology is reached, the theory may be expanded to incorporate the unique characteristics of the government/education area. This process is similar to the growth of the Baldrige Quality Criteria, where it began in manufacturing and expanded to include services, health care and education.

Research about the effectiveness of education is also motivated by the NCLB (No Child Left Behind) legislation. This law has generated lots of questions for legislatures, local governments, communities, bureaucrats and citizens to identify
effective practices and organization structures that can efficiently meet the requirements of the legislation.

The research described in this section has described approaches that are commonly taken to define what TQM is and the value that firms who have effectively implemented TQM have earned for their efforts. The conclusion is that implementing TQM can be an effective way to improve the way an organization operates. The challenge in implementing TQM is deciding what components of TQM should be installed, what sequence should be used to install the components of TQM, and determining if some components should get more management emphasis than others.

Dow, Samson and Ford (Dow, Samson et al. 1999) found that employee commitment, shared vision and customer focus were the TQM components that were most important in a large scale survey of manufacturers. Flynn, Schroeder and Sakakibara (Flynn, Schroeder et al. 1994) sampled a cross section of manufacturers at the plant level and concluded that statistical control/feedback was important in achieving perceived quality outcomes and that top management support and workforce management were important infrastructure components of TQM. Statistical control/feedback is detecting and feeding back information about defective products of the process to the process operators and perceived quality outcomes is management’s perception of the product quality and customer service relative to the competition. Workforce management was defined as including a non-traditional approach to problem solving and compensation in workforce management practices, which includes team problem solving and pay for knowledge among team members.
Top management support includes providing the resources to develop strong customer and supplier relationships, communicating a clear strategy and requiring use of fact-based decision-making. This research stream focuses on the manufacturing segments of the economy; in the education sector there is an opportunity to identify the most significant dimensions of TQM.

Reengineering

In the operations area of the ODE the term reengineering is often used to describe the organization changes experienced in the department. In July 1999 The State Superintendent announced that the fiscal management process would be reengineered to simplify and streamline payments to school districts and that the teacher licensure process would be reengineered to improve efficiency. Because of this commitment to the process, research on reengineering is reviewed here to establish a theoretical basis for “reengineering” at the ODE and identify what benefits the agency is likely to see as a result of their reengineering activities.

Reengineering is often associated with the work of Michael Hammer who co-authored two books introducing the concept in the mid 1990s. The first book Reengineering the Corporation (Hammer and Champy 1993) approached reengineering as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance.

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7 Ohio State Board of Education Press Release July 13, 1999
Reengineering differs from TQM by systematically looking for innovative breakthroughs through the use of new processes. In this instance a breakthrough means satisfying the customer in a different way that enhances the value received by the customer and/or the efficiency of the process used to create the product/service.

A firm would be motivated to reengineer a process by changes in the environment or business climate that makes a change necessary in order to maintain customer loyalty or expand access to customers. Hammer and Champy note three factors that contribute to the need for reengineering:

1. Customers exercise choice, giving them market power and access to data that facilitates their purchase decision.

2. Competition has increased the fragmentation of once homogeneous markets into niches. Global competition has developed in the largest markets facilitated by new technology.

3. The pace of change has increased and the change is generated in new areas. (e.g. product changes, service cycle changes, logistic system changes)

A key principle supporting these factors is that customer need drives the process of production.

Reengineering is a process-oriented concept, and has a number of characteristics that separate the reengineering process from other management tactics to improve performance. Some of the most common characteristics of reengineering are:

1. Several jobs combined into one

2. Workers make decisions
3. The steps in the process are performed in a natural order

4. Processes have multiple versions (reduced standardization); for fewer standardized models

5. Work is performed where it makes the most sense

6. Checks and controls are reduced

7. Reconciliation is minimized (actual to planned production/inventory)

8. Fewer points of contact between the process and the customer

9. Hybrid centralization/decentralization of operations

These characteristics of reengineering are experienced by an organization successfully implementing reengineering.

A critical part of the reengineering process is choosing what process(es) should be reengineered. Hammer and Champy propose that processes being considered should be prioritized based on three criteria:

1. The amount of dysfunction in or caused by the process

2. The impact on customers

3. Which processes are most susceptible to successful reengineering

Once a process has been selected for reengineering, process maps should be developed to depict the complete process under study and identify critical issues that govern performance. A process map diagrams how work flows through an organization, identifying all the steps a product goes through, how many times it is
handled, processing time and waiting time from the initiation of an order through the customer receipt of the order. With this understanding the customer’s perspective can be layered onto the map identifying customer requirements, problems and a description of what is done with the process output. The understanding gained by mapping the process and documenting customer requirements can then be used to design a new process satisfying the customer need and eliminating those activities that do not provide customer value. The reengineering process is described in Hammer’s books, and it is left to the reader to continue this stream of research as their needs dictate.

Hammer and Stanton (Hammer and Stanton 1995) note that for mission driven organizations like the ODE, two critical issues in the reengineering process are: 1) How to determine success; volume (the most common performance indicator) is insufficient; effectiveness and quality need to be included to create meaningful performance measures. 2) Identifying customers; In the ODE’s case the customer is a mix of legislators, the governor, school district administrators, teachers, students, parents and taxpayers.

Reengineering Validity

Much of the validity of reengineering is based on case studies of organizations that used the process and achieved significant results from their efforts. Jarrar and
Aspinwall (Jarrar and Aspinwall 1999) performed a meta-analysis on seventy nine previously published case studies and found that:

- Reengineering is applicable to all types of organizations: public, private, manufacturing, service and non-profit.
- Reengineering occurs at different levels in organizations: departmental processes, cross functional processes, whole organizations, supply chains and whole communities.
- Most reengineering projects were motivated in response to a change in the organizations environment (government legislation, increased competition, or information technology revolution i.e. external forces). The second most frequent motivator was reduced revenue and market share loss due to departmentalization and bureaucratic work.
- Of the cases where results were reported (61/79); 97% of those (59) reported major or radical improvement, defined as greater than 30% or 60% over the old way of working.

Jarrar and Aspinwall identified the critical success factors of reengineering projects segmented into four main categories; culture, structure, process and information technology (IT). These factors are listed in the following table. (Table 2.6)
Reengineering: Critical Success Factors

Culture
- Employee involvement and empowerment
- New reward and recognition system
- Customer Focus
- Emphasis on soft skills (attitude)
- Pre-reengineering cultural audit

Structural
- Cross-functional teams and teamwork
- Top management commitment
- Continuous and comprehensive communication

Process
- Training
- Conduct a pilot study
- Assign the “best” people for reengineering
- Involve outside consultants
- Clear vision
- Customer focus
- Top down approach
- Benchmarking

Information Technology
- Use of latest technological developments
- Involved IT experts
- Rapid development of IT requirements

Table 2.6 Reengineering: Critical Success Factors

This research is very supportive of the reengineering process extending the theory by consolidating findings from a variety of environments. The critical success factors are a useful summary of areas businesses need to pay attention to when using reengineering methodology. The reengineering process has a lot of supporters in both academic and industrial segments and researchers have begun modeling the process to further enhance the effectiveness of change in the organization (Jang 2003), (Hwang and Yang 2002); (Gunasekaran and Kobu 2002); (Zakarian and Kusiak
These models provide additional examples of characteristics to emphasize to achieve specific results from the process.

Reengineering Applied to ODE

Reengineering as a tactic is very applicable to ODE. Some of the environmental constraints placed upon the ODE by stakeholder groups, in particular the state and the federal government, make radical organization change very difficult. The objective set by the superintendent to reengineer specific processes is a valid approach to introduce the practice of radical change to all the stakeholders. Once the effectiveness of the method is demonstrated, the superintendent will have the ability to leverage the example to reengineer other processes and departments in the organization.

Balanced Scorecard

The “Balanced Scorecard” (BSC) is a framework introduced by Robert Kaplan and David Norton (Kaplan and Norton 1996) that integrates performance measures derived from an organizations strategy into the basic tenets of the organizations management processes. The objective of the framework is to provide a systematic process to implement and obtain feedback about strategy. The components of the
framework are depicted in Figure 2.3. The principal components of the framework are: clarifying and translating the vision and strategy, communicating and linking, planning and target setting, and strategic feedback and learning are repeated with each review cycle, and with each iteration the organization should improve its ability to reach its objectives. The balanced scorecard is connected to each of these components, collecting performance measures of key processes that are used to guide objective attainment.

The Balanced Scorecard as a Strategic Framework for Action

Kaplan and Norton, 1996, page 11

Figure 2.3 The Balanced Scorecard as a Strategic Framework for Action
The framework is very generic and can be applied to any type of organization. A key part of implementing this framework is to develop a process value chain that maps customer needs (current and future) with the processes in place to satisfy and provide post sale service to those needs. This “process mapping” or value stream mapping has been adopted by the ODE in the development of “Logic Models” which have been created at enterprise, center and department levels of the organization. Kaplan and Norton note that core employee measurements include employee satisfaction, retention and productivity. These core elements are driven by employee satisfaction and are especially important in service businesses (like the ODE). The authors suggest that to measure employee satisfaction multiple questions should be asked including:

1. Involvement with decisions
2. Recognition for doing a good job
3. Access to sufficient information to do the job well
4. Active encouragement to be creative and use initiative
5. Support level from staff functions
6. Overall satisfaction

Kaplan opines, “The ability to meet ambitious targets depends on the organizational capabilities for learning and growth. The enablers for learning and growth come primarily from three sources: employees, systems and organizational alignment. Strategies for superior performance will generally require significant investments in
people, systems and processes that build organizational capabilities.” When reduced to its most fundamental level the “Balanced Scorecard” is a measurement system with the objective of motivating managers and employees to successfully implement strategy. Ideally this measurement system will capture cause and effect relationships, be linked to the organization’s financial performance and capture the performance drivers of the organization.

Validating the Balanced Scorecard

The balanced scorecard (BSC) is supported with a number of case studies that demonstrate the effectiveness of the framework and highlight errors to avoid in its implementation. Between 2002 and 2005 ABI/Informs, the research database incorporating over 2500 scholarly journals, listed 214 articles on the Balanced Scorecard. Included in this literature stream are numerous case studies and a few meta-analyses; some of the recent applicable research is briefly described in the following paragraph.

Niven (Niven, Lichter et al. 2003) compiled a step-by-step implementation procedure for government and non-profit organizations and Karathanos and Karanthanos (Karathanos and Karathanos 2005) wrote on how to apply the BSC to education. (Pforsich 2005) in researching why implementing Balanced Scorecard tactics did not

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8 Kaplan and Norton, 1996, page 146
correlate with measured performance improvement recommended better training of personnel (via workshops) on implementation techniques. Failure in this research has defined failure as the inability of adopting BSC to make a performance difference in the organization. Tennant and Tanoren’s (Tennant and Tanoren 2005) research, from a small and medium enterprise perspective, noted that the BSC is the most popular performance measurement framework. These works focus more on how to implement BSC rather than why, and the following researchers provided arguments in support of using the BSC. Da Silva, Tadashi, and Kikuo (Da Silva, Tadashi et al. 2005) compared world-class companies in Japan and Brazil and noted that the use of BSC and the Baldrige Framework were effective tactics in achieving world-class performance. Hendricks, Menor, Wiedman and Richardson (Hendricks, Menor et al. 2004) indicated in a sample of North American firms that adopting BSC enhances firm performance. Davis and Albright (Davis and Albright 2004) performed a study of bank branches and found that those using BSC outperformed those that did not use the measurement system. Olve, Petri, Roy and Roy (Olve, Petri et al. 2004) concluded a twelve-year study supporting the advantage of the BSC. They claim that “The BSC is one of the most successful, endurable management concepts in recent years” for all business. The volume of research conducted on the BSC, why it should be used, and how to implement it in a variety of organizational cultures and environments is an indication of the concepts validity and reliability at providing valuable information to management.
Balanced Scorecard Application to ODE

As mentioned earlier in this section, the BSC method can be applied to any organization, including the ODE. The process is rooted in the strategy of the organization, capturing key performance measures beyond the traditional financial performance measures of a business. Traditional financial measures are not completely applicable in the ODE, but the BSC approach can accommodate the measurement nuances of the ODE environment. The logic models the ODE has implemented and the models being developed throughout the organization identify key performance measures that are financially based, and measures that are based on progress toward non-financial objectives.

Summary

This research attempts to relate the implementation of Baldrige philosophy to organizational performance. The unit of analysis is the organization, with supplemental analysis at the department level. One objective of this research is to test the generalizability of the Baldrige criteria to the ODE, an education service provider that does not operate schools, and determine the effectiveness of using the criteria to improve performance. In this chapter the Baldrige Criteria has been described as a theory that has the ability to steer an organization to improved performance, with many examples in other industries and environments where significant performance improvement was realized. The ability to identify that implementing the Baldrige
Framework leads to improved performance in this environment would be a significant contribution to management knowledge.

The literature provides strong theoretical and empirical support that the Baldrige Framework is a valid, reliable method to measure the extent of use of total quality management practices in use in an organization. As the philosophy of Baldrige has been integrated into the organization of the ODE, the structure of the ODE has evolved to better accommodate the needs of the organization internally and the needs of the external environment.

In this chapter alternative theories have been presented that could have been used by the ODE to design a more effective organization (more effective than before the Baldrige Framework was chosen as the method to measure organizational quality). Based on the theory defining the Baldrige Quality assessment, TQM, Reengineering, or The Balanced Scorecard there is no characteristic that exempts an organization like the ODE from benefiting from applying the principles of any of these theories to the management of the organization. The unique nature of the organization (ODE) originates in the definition of the customer and the difference that exists between the customer and the source of revenue for the ODE. This uniqueness can be accounted for by selecting appropriate performance measures to guide the organization to achieving its planned objectives. Over time through the consistent use of quality improvement methods the performance measures will evolve to more accurately
reflect the controllable output of the organization relative to the goals of the organization. The ODE choose to use the Baldrige philosophy and incorporated aspects of the Balanced Score Card and Reengineering to achieve its organizational objectives.

Roth and Senge (1996) characterize the type of problems in public education as “wicked messes: having both dynamic and behavioral complexity requiring new syntheses of previously disconnected approaches to solve.” Using the Baldrige Framework to monitor organization performance, Reengineering to streamline particular processes and the Balanced Scorecard to comprehensively measure department and agency performance tied to specific agency objectives is a custom synthesis of management methods that should improve the performance of the agency.

The strategic choices the ODE has made to implement change in the organization and improve organizational performance are well supported theoretically and extend the theory into the education/service/public agency environment. In the next chapter, the assessment process that was used to develop the data to determine if the agency has improved its performance is described.
CHAPTER 3
METHODOLOGY

Introduction

The objective of this research is to provide an answer to the following questions:

1. Has the Ohio Department of Education successfully implemented the Malcolm Baldrige Quality Framework as its operating structure? In particular this study is centered on the operations function within the ODE, who sponsored this research and is the key adopter of “reengineering” efforts to improve performance.

   a. Is the Malcolm Baldrige Framework an appropriate method of obtaining organizational performance improvement compared to alternative methods of achieving organizational performance improvement?

   b. Given that the objective of the ODE is to improve the achievement of all students in the public education system, what kind of performance improvement has taken place in the organization and does this improvement cause or correlate to achieving the organizations objective?
The plan of study to answer these questions is to use a combination of research methods, specifically case study and survey. To address the first question (1) a survey is used that is compared to benchmark responses provided by the Baldrige National Quality Program. The differences in the pattern of responses between the benchmark and the ODE’s employees are an indication of whether the ODE emphasizes the same management practices as the Baldrige Quality Framework. The second component of the research design is a series of case studies that describe actions taken by the ODE to improve their performance. These actions included implementing strategy motivated by their understanding of how the Baldrige Framework can be applied to their environment. These case studies document the performance change that has occurred over time within the organization and depict good quality practices that are used by managers in the organization. These two methods are then consolidated to draw some general conclusions from the research; specifically that the Malcolm Baldrige Framework is not yet incorporated into the philosophy of the organization, but good quality management practices are being implemented that positively effect organization efficiency.

This chapter describes the research methods used to collect data at the ODE and reports the case studies generated from the aggregation of data sources used.
Case Based Research Overview

Case based research is a formal research strategy that can be used to provide description, explain causal linkages, test theory and generate theory (Eisenhardt 1989), Yin 1994, Cua 2000). Case based research allows a phenomenon to be studied in its natural setting to provide a “Reality Check” of the relevance of a theory that is being tested (Cua 2000). One of the advantages of the case study method is that it is possible to deviate from the plan of study to take advantage of serendipitous findings during data collection without invalidating the study. “Controlled opportunism in which researchers take advantage of the uniqueness of a specific case and the emergence of new themes to improve resultant theory”, is one way that Eisenhardt (1989) describes an advantage of case based methodology over other research methods. For these reasons the case based method is a useful approach to study the transformation at the ODE, which will contribute to the research fields of case based research, the theory of reengineering and the Baldrige quality framework. The ODE is very interested in developing a case describing their reengineering experience to generate a benchmark for additional departments within the agency and as a standard for similar organizations in other states.

With the logic described by Yin, Eisenhart and Cua grounding case methodology, and the desire of the ODE to use the method, the case method will be employed tactically
to collect data from the ODE, its clients and other stakeholders. The data to be collected will be combined from multiple data sources - archives, interviews, observations and questionnaires to allow validation of the analysis. Use of multiple data sources allows greater depth and breadth of evidence supporting the conclusions, which is a critical factor in the validity of the study (Bergen and White 2000, Hutchinson 1990).

The objectives of this research include documenting a description of how the ODE is transforming as a result of the reengineering process employed and evaluating the process relative to the literature in the field. The case study will trace the organization over time and provide context and explanation for the changes experienced. “The essence of a case study, the central tendency among all types of case study is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented and with what result.” (Schramm 1971, quoted in Yin 1994) Exposure of these decisions and the processes used to identify and implement them will benefit theory development in the reengineering and quality fields. As Lloyd-Jones stated in the International Journal of Quantitative Methods (Lloyd-Jones 2003) “The ultimate aim of experimental method is to develop theory through repeated testing of related hypotheses.” Testing theory with a case study method includes contextual conditions which are important in determining what decisions were made in the process of reengineering at the ODE and how these decisions affect performance.
Figure 3.1 Research Design, depicts the stages that this research used to develop a comprehensive and rigorous study of the operations of the ODE. This general plan is organized in chronological order beginning at the top left and concluding with the consolidated report in the bottom right corner of the figure. The length of each rectangle approximates the expected duration of each step relative to the other steps in the initial study plan. The plan includes the development of four case studies. The Develop Theory stage, was constructed in the literature review, where the grounding of the logic of reengineering and its relationship to quality and performance is presented based on prior research. The other steps in the figure are presented in this chapter.
Figure 3.1 Research Design

In order to fully describe the impact of the reengineering process that has been employed by the ODE, processes that have been reengineered, processes that are in the reengineering process and processes targeted for reengineering were included in the case analysis. Because the processes are unique within the ODE, performance
measurement will be a comparison of pre and post reengineering performance when available.

The unit of analysis for the study is the individual process reengineered and four cases were generated (reengineered processes) within the study. Four cases is the suggested minimum (Eisenhardt 1989) to generate theory that has sufficient complexity while providing adequate empirical grounding. Because this research is testing theory four cases should provide sufficient data to make inferences about the process.

Design of Data Collection Instruments

Data will be collected through the four independent methods noted earlier, review of archived documents, non-participant observation of staff and department meetings, interviews with key employees and surveys of additional employees. Using multiple data sources enhances construct and external validity (Yin, 2003) by allowing triangulation of data analysis, which also enhances internal validity. Specific data collection tactics are discussed below with the primary objective identified.
Review of archived documents:

The archived documents reviewed include presentations, memos, organization charts, consultant reports, meeting notes and letters. These documents were used to describe the environment before the organization’s restructuring and define the objectives of the current organization. The strengths of this tactic are its stability over time, broad coverage, accuracy and independence of any case study induced bias.

 Archived data on process and process results were collected for the identified processes prior to the start of the reengineering effort and following implementation of the redesign. These process measures were reviewed by the appropriate process managers to validate reasonableness. In some cases the desired data did not exist, and subsequently a complete comparison of pre and post change in performance was not possible.

 Archived information about the process includes:

Data Collected from archive

1. Process description
2. Customers of the process
3. Resources consumed by the process
   3.1. Manpower
   3.2. Financial
   3.3. Other
4. Output/products of the process (units)
5. Process Map
6. Process performance measures and results
   6.1. Efficiency measures
   6.2. Effectiveness measures

Table 3.1 Data Collected from archive
Observation of Meetings:

Staff and department meetings were observed to understand the process used to plan and implement activities to perform the reengineering task (for processes being reengineered) so it can be compared with the process described in Hammer and Champy (Hammer and Champy 1993). For processes that have completed reengineering, these observations provided data supporting the operation of the reengineered organization. Notes of these meetings highlighted how different functions interact, how conflicts were resolved and how change was managed. This tactic provides rich contextual detail at the expense of research time and cost.

Another concern that the researcher was sensitive to, was bias that could be created by an outsider observing a meeting. The control for this bias is not absolute, but the bias if it existed was reduced as more time was spent by the researcher with the employees of the organization. Bias if it exists would also be identified by differences in the data collected by other methods.

Key issues noted in meetings

1. Agenda setting and use of agenda to control meeting flow and team activity
2. Focus of the team on team objectives
3. Work processes
4. Use of process methodology (Hammer and Champy 1993)
   4.1. Frequency of use of specific Hammer prescriptions

Table 3.2 Key issues noted in meetings
Interviews with key managers:

Key managers from each division within the organization were interviewed to provide information on historical, current and planned objectives and processes within their area. The interviews asked for facts and perceptions of department/functional performance in the past and present, along with any documents, participants or other evidence to support the noted facts and perceptions. The assessment of future objectives will be asked separately from the current and historical periods and all periods will address the appropriate topics identified in the following list.
Interviews with process stakeholders were conducted to:

Interview Questions

1. To identify the process steps used to reengineer
2. To determine the duration of the reengineering process
3. To document the performance measures used by the reengineering team
   3.1. Collect examples
   3.2. Identify the number and type of measures
4. To identify the resources used/consumed by the team/process
   4.1. Human
   4.2. Financial
5. Identify team leader authority
   5.1. To document any barriers the team had to negotiate to obtain results
6. Solutions used to overcome barriers
7. Identify and document additional performance potential
8. Report resultant process and structure
9. Report result using performance measures
10. Identify subjects perception of advantages of the reengineering process
11. Identify subjects perception of the disadvantages of the reengineering process
12. Identify the most satisfying aspects of the process
13. Identify the most frustrating aspects of the process
14. Document senior management support of the reengineering process
   14.1. Note how support is demonstrated with/through examples

Table 3.3 Interview Questions

The list in Table 3.3 was modified as necessary to eliminate unnecessary questions or topics based on the progress the process had in the reengineering effort.
Employee Survey:

Additional employees were surveyed to gauge their understanding and support of the changes occurring at the ODE and their impact on individual, group and organizational performance. An advantage of this tactic is its broad reach of employees. Separate questionnaires were developed for supervisor and non-supervisory employees and the survey questions are identified in Tables 3.5 and 3.6 respectively.

Questionnaires were developed incorporating topics from interviews, reengineering theory and the Baldrige Criteria. The objective of the questionnaire was to capture the perceptions of those not interviewed, and to establish the general awareness of MBNQA concepts. The Baldrige criteria was designed to recognize/identify superior performing organizations through an internal assessment of organizational practices. The Baldrige Education Criteria is a recent (1998) extension of the Baldrige Criteria for business and to-date little research has been published validating the framework in education environments. There is no known empirical study of the criteria that includes a service organization like the ODE. Theoretical analysis of the applicability of the criteria has been published but they focus on the education provider, the school system or school district (Arif and Smiley 2003). Winn and Cameron, (Winn and Cameron 1998) empirically tested the Baldrige framework on/at a large university and found partial support for the framework, which has been modified since the 1995 edition that was tested. The modifications generally conform
to the Winn and Cameron finding that there is not a direct relationship between leadership and performance (organizational) outcomes.

The survey instrument used in this research is based on surveys used in industry, surveys used by education organizations, and a survey introduced by the Baldrige organization in 2004. The assimilated survey assesses the seven dimensions of the Baldrige criteria plus organizational culture, climate, work practices, organizational effectiveness and respondent demographics.

The content areas of the questionnaire are:

Survey Categories

1. Understanding of the reengineering process
2. Outcome of the reengineering process
3. Awareness of the Baldrige objectives and philosophy
4. Management performance based on Baldrige criteria

Table 3.4 Survey Categories

Questionnaires have been developed for the employees of the ODE at two levels, supervisory (Table 3.5) and non-supervisory (Table 3.6), so feedback on the reengineering process can be included from both sets of internal stakeholders.
Questionnaire Questions – Supervisor

5 point Likert Scale: (Never Agree, Disagree, Neither Agree nor Disagree, Agree, Always Agree {or modified as appropriate})

1. **Leadership**
   1.1. The number of our employees that know the Ohio Department of Education (ODE) agency’s mission (what we are trying to accomplish).
   1.2. The extent to which there is organization wide commitment to the mission of the ODE.
   1.3. The number of our employees that know our center’s or unit’s mission (what we are trying to accomplish).
   1.4. Our leadership team _____ creates a work environment that helps our employees do their jobs.
   1.5. Our leadership team _____ shares information about the organization. Our leadership team lets our employees know what we think is most important.
   1.6. Our leadership team _____ encourages learning that will help all our employees advance in their careers.
   1.7. Our leadership team _____ lets our employees know what is most important.
   1.8. Our leadership team _____ asks employees what they think.
   1.9. Our center or unit leaders are _____ responsible for leading process improvement.
   1.10. Senior managers are _____ accessible to customers.
   1.11. We _____ use performance feedback to improve the quality of our processes (products).

2. **Strategic Planning**
   2.1. I refer to the ODE Strategic Plan
   2.2. The frequency with which our leadership team asks employees for their ideas in the planning process.
   2.3. The extent to which our employees know the parts of our organization’s plans that will affect them and their work.

Continued

Table 3.5 Questionnaire Questions – Supervisor
Table 3.5 continued

2.4. The number or our employees that know how to tell if they are making progress on their work group’s part of the plan.

2.5. Our employees check the progress of their work group’s part of the plan.

3. Customer and Market Focus

3.1. (Note: Your employees’ customers are the people who use the products of their personal work.) The number of our employees that know who their most important customers are.

3.2. Customer complaints are a performance measure used in _____ of the performance reviews that I give.

3.3. Our employees correspond (talk, email or written) with their customers.

3.4. Customers tell our employees what they want.

3.5. Our employees ask if their customers are satisfied or dissatisfied with their work.

3.6. Our employees have the authority to make decisions to solve problems for their customers.

3.7. The agency quickly takes action to meet the changing needs of our customers.

3.8. The agency effectively takes action to meet the changing needs of our customers.

3.9. Our customers know who to complain to when there is a problem.


4.1. The agency (ODE) does a good job of measuring and evaluating the effectiveness of individual programs.

4.2. Performance measures (cost, schedule, performance) exist for each program (project).

4.3. Performance measures are clearly related to agency (ODE) goals.

4.4. Performance measures are clearly related to office goals.

4.5. Performance measures are reviewed at regular intervals for each program.

4.6. The number of ODE employees who know how to measure the quality of their work.

Continued
Table 3.5 continued

4.7. Our employees know how to analyze (review) the quality of their work to see if changes are needed.
4.8. Our employees use these analyses for making decisions about their work.
4.9. The number of our employees who know how the measures they use in their work fit into our office’s overall measures of improvement.
4.10. Our employees get all the important information they need to do their work.
4.11. Our employees get the information they need, to know how our organization is doing. (organization = center, office, section or unit)
4.12. The overall quality of communications throughout the agency is adequate.
4.13. The overall quality of communications throughout my center (office) is adequate.
4.14. Management effectively communicates the impact and necessity of change before embarking upon new initiatives.
4.15. The agency gathers best practices from other states.

5. Human Resource Focus
5.1. Our employees make changes that will improve their work.
5.2. Our employees cooperate and work as a team.
5.3. Our employees are recognized for outstanding work.
5.4. Our employees have a safe workplace.
5.5. Our managers and our agency care about our employees.
5.6. Non-performing employees are counseled on how to improve.
5.7. Non-performing employees are given a timeframe to demonstrate improvement.
5.8. Unsuccessful non-performing employees are transferred.
5.9. Unsuccessful non-performing employees are terminated.
5.10. The criteria for determining training needs are clear and fair for each employee.
5.11. We encourage and enable our employees to develop their job skills so they can advance their careers.
5.12. The agency does a good job rewarding the best and brightest employees.
5.13. The agency takes time to celebrate individual and collective achievements.
Table 3.5 continued

5.14. I receive a formal performance appraisal at least once per year.
5.15. My performance is evaluated against my performance goals or plan.

6. Process Management
6.1. I include the input of local school officials when working to develop and implement ODE policy.
6.2. Important processes are identified and communicated to my subordinates.
6.3. Our employees can get all the information and resources they need to do their jobs.
6.4. Our employees collect information (data) about the quality of their work.
6.5. Our organization has good processes for doing our work. (organization = center or office)
6.6. Our employees have control over their personal work processes.

7. Business Results
7.1. Our employees’ customers are satisfied with their work.
7.2. Our employees’ work products meet all requirements.
7.3. Our employees know how well our organization is doing financially. (organization = center or office)
7.4. Our organization uses our employees’ time and talents well.
7.5. Our organization removes things that get in the way of progress.
7.6. Our organization obeys laws and regulations.
7.7. Our organization has high standards and ethics.
7.8. Our organization helps our employees help their community.
7.9. Our employees are satisfied with their jobs.

8. Reengineering
8.1. Processes in my center, section or unit have been reengineered.
8.2. I know who my customers are.
8.3. Organizational Values are _____ communicated. (organization = department or center)
8.4. _____ of the redundant operations in my department have been eliminated.
8.5. Since reengineering, I have _____ control over getting my job accomplished.

Continued
Table 3.5 continued

8.6. _______ of my compensation increase is based on the results of my work.
8.7. _______ of the promotions in my department (center) are based on performance.
8.8. _______ of my performance measures have shifted from activities to results.
8.9. _______ of my activities contribute to the organization’s mission.
8.10. _______ of the work in reengineered processes is performed where it makes the most sense.
8.11. Since reengineering, _______ of the numbers of checks and controls have been reduced.
8.12. Computer technology has had a _______ on our process redesign.
8.13. The volume of work I process has an effect on _______ of my performance measures.
8.14. The quality of work I produce has an effect on _______ of my performance measures.
8.15. The customers rating of my output has an effect on _______ of my performance measures.
Questionnaire Questions - Employee

5 point Likert Scale: (Never Agree, Disagree, Neither Agree nor Disagree, Agree, Always Agree {or modified as appropriate})

1. **Leadership**
   1.1. I know _____ of the ODE’s mission (what it is trying to accomplish).
   1.2. I know _____ of my center’s (or office's) goals (what it is trying to accomplish).
   1.3. I am committed to achieving _____ of my department’s (center’s) goals.
   1.4. My senior (top) leaders use our agency’s values to guide us _____ of the time. (agency = ODE)
   1.5. My senior leader(s) create a work environment that helps me do my job _____ of the time.
   1.6. The organization’s leaders _____ share information about the organization.
   1.7. My senior leaders _____ encourage learning that will help me advance in my career.
   1.8. My organization’s leader(s) _____ lets me know what they thinks are most important. (organization = center or office)
   1.9. My organization's (center or office) leader(s) _____ ask what I think.
   1.10. Management _____ focuses on improving student performance.
   1.11. Organization values are _____ communicated. (organization = center or office)

2. **Strategic Planning**
   2.1. I _____ refer to the ODE strategic plan.
   2.2. As it plans for the future, my organization _____ asks for my ideas. (organization = center or office)
   2.3. I know the _____ of the parts of my organization’s plans that will affect me and my work.
   2.4. I _____ know how to tell if we are making progress on my work group’s part of the plan.

Continued

Table 3.6 Questionnaire Questions – Employee
Table 3.6 continued

2.5. I _____ check the progress of my work group against my departments plan.

3. Customer and Market Focus
   3.1. I know who _____ of my most important customers are.
   3.2. I regularly keep in touch with _____ of my customers.
   3.3. _____ of my customers tell me what they want.
   3.4. I ask _____ of my customers if they are satisfied or dissatisfied with my work.
   3.5. I _____ have access to information that enables me to make decisions to solve my customers' problems.
   3.6. I _____ have the authority to make decisions to solve problems for my customers.
   3.7. The agency _____ takes action to meet the changing needs of our customers quickly.
   3.8. The agency _____ takes action to meet the changing needs of our customers effectively.

   4.1. The agency (ODE) _____ does a good job of measuring and evaluating the effectiveness of individual programs.
   4.2. I _____ know how to measure the quality of my work.
   4.3. I _____ analyze (review) the quality of my work to see if changes are needed.
   4.4. I _____ use these analyses for making decisions about my work.
   4.5. I _____ get the information I need to know about how my organization is doing. (organization = center or office)
   4.6. Performance measures are _____ communicated to me.
   4.7. The overall quality of communications throughout the agency is _____ clear.
   4.8. The overall quality of communications throughout the agency is _____ comprehensive.
   4.9. The overall quality of communications throughout my center (office) is _____ clear.
   4.10. The overall quality of communications throughout my center (office) is _____ comprehensive.

Continued
4.11. Management _____ effectively communicates the impact and necessity of change before embarking upon new initiatives.

5. Human Resource Focus
5.1. I _____ have the authority to make changes that will improve my work.
5.2. The people I work with _____ cooperate and work as a team.
5.3. My supervisor _____ encourages me to develop my job skills so I can advance in my career.
5.4. I am _____ recognized for outstanding work.
5.5. I _____ have a safe workplace.
5.6. My supervisor and my organization _____ care about me.
   (organization = center or office)
5.7. I _____ receive a formal performance appraisal at least once per year.
5.8. My performance is _____ measured based on my performance goals or plan.
5.9. Non-performing employees are _____ counseled on how to improve and given a timeframe to demonstrate improvement.

6. Process Management
6.1. Important processes are _____ emphasized by management.
6.2. I _____ can get all the information and resources I need to do my job.
6.3. I _____ collect information (data) about the quality of my work.
6.4. We _____ have good processes for doing our work.
6.5. I _____ have control over my work processes.

7. Business Results
7.1. My customers are _____ satisfied with my work.
7.2. My work products _____ meet all requirements.
7.3. I _____ know how well my organization is doing financially. (How we compare to our budget)
7.4. My organization _____ uses my time and talents well. (organization = center or office)
7.5. My organization _____ removes things that get in the way of progress. 
   (organization = center or office)
7.6. My organization _____ obeys laws and regulations. (organization = center or office)

Continued
Table 3.6 continued

7.7. My organization _____ has high standards and ethics. (organization = center or office)
7.8. The ODE _____ helps me help my community. (organization = center or office)
7.9. I am _____ satisfied with my job.

8. Reengineering Questions
8.1. Processes in my center, section or unit have been reengineered.
8.2. I have _____ control over getting my job accomplished (than before reengineering)
8.3. _____ of the promotions in my department (center) are based on performance.
8.4. _____ of my performance measures have shifted from activities to results.
8.5. _____ of my activities contribute to the organization’s mission.
8.6. _____ work (in reengineered processes) is performed where it makes the most sense.
8.7. Since reengineering, _____ of the numbers of checks and controls have been reduced.
8.8. Computer technology has had a ______ on our process redesign.
8.9. The volume of work I process has an effect on ______ of my performance measures.
8.10. The quality of work I produce has an effect on ______ of my performance measures.
8.11. The customers rating of my output has an effect on ______ of my performance measures.
The data collected through these four tactics was used to create case studies (narratives) that inform on the decisions made to align the organization to the Baldrige Model and the effectiveness of this organization compared to the old organization. The propositions introduced earlier and repeated below, can then be assessed relative to the data collected.

Proposition 1) Organization changes made at the ODE conform to the philosophy of the Malcolm Baldrige National Quality Award Criteria.

A potential hypothesis is that the organization’s consistency with the Baldrige framework (emphasizing leadership, strategic planning and measurement) will be positively correlated with higher performance. In this instance performance is measured as efficiency and effectiveness, in addition to the ODE’s primary performance measure “higher achievement for all students.” Efficiency is defined as the capacity of the ODE to administer projects and effectiveness as the ability to insure that the projects administered achieve their objective. The case studies highlight measures of efficiency and effectiveness as defined and used by each subset of the organization and the organization as a whole. Indicators included in the case documentation are: resources consumed by activity unit (in dollars, man-hours and/or total capital), and the speed of project completion (in this instance the project is the activity that the process is used for, not the reengineering project). Other measures used by the ODE will be included as appropriate. Effectiveness indicators are more project specific and in the past, have been measured through awareness of programs
by other stakeholder groups, and participation by stakeholder groups (stakeholder groups include the target audience of a program or customers) of the ODE.

Consistency with the Baldrige Framework is measured as the emphasis placed on the seven categories of the Baldrige Criteria relative to the weight (point value) that each category has in scoring during the Baldrige examination process.

The seven categories of the Baldrige Education Criteria and their point values are:

**Baldrige Scoring Weights**

<table>
<thead>
<tr>
<th>Baldrige Category</th>
<th>Point Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Leadership</td>
<td>120</td>
</tr>
<tr>
<td>2 Strategic Planning</td>
<td>85</td>
</tr>
<tr>
<td>3 Student, Stakeholder and Market Focus</td>
<td>85</td>
</tr>
<tr>
<td>4 Measurement, Analysis and Knowledge Management</td>
<td>90</td>
</tr>
<tr>
<td>5 Faculty and Staff Focus</td>
<td>85</td>
</tr>
<tr>
<td>6 Process Management</td>
<td>85</td>
</tr>
<tr>
<td>7 Organizational Performance Results</td>
<td>450</td>
</tr>
</tbody>
</table>

Table 3.7 Baldrige Scoring Weights

Proposition 2) The changes made by the ODE resulted in improved organizational performance by: a) Identification of key performance drivers. b) Use of these drivers have enhanced the value delivered to customers.

This proposition can be tested by using the efficiency and effectiveness measures to compare pre-reengineering performance with post-reengineering performance for the
effected processes. The reason the reengineering effort was undertaken was to improve the efficiency and effectiveness of the ODE, and this analysis provides primary validation of the decision to reengineer.

Select Cases

Pilot Case

A pilot case was conducted to refine the data items targeted for collection and the processes used to collect them. The selection of which “reengineered” process was used as the pilot case was jointly determined by the management of the ODE and the researcher. The characteristics desired in the pilot case were:

- A process that has completed reengineering.
- A process that has significant impact on the operation of the ODE either through the volume of resources distributed, amount of personnel required to administer or the strategic impact of the process on the clients of the ODE and the State of Ohio.

The process that was the first implementation for the department was a “reengineering” of fiscal policy which was the pilot case. Other processes in various stages of reengineering include: human resources, state regulatory process, policy council and program council. Additional information was collected to determine if these efforts were reengineering projects beginning based on the terminology used to
describe the project and the effort undertaken to complete the project. Hammer and Champy (Hammer and Champy 1993) would argue that you do not “reengineer” departments, you “reengineer” processes and in a number of instances employees of ODE have used the terms interchangeably. The initial data collection and pilot case clarifies these differences in terminology and report on the reengineering processes that are incorporated into the analysis.

Selection of Additional Cases

The four cases identified at the ODE comprise the sample frame of this research and Hammer and Champy (1993) provide a rationale for prioritizing reengineering prospects which can be used to rank the order of the cases to be included. Their rationale includes consideration of the amount of dysfunction in the process to be reengineered, the impact that the process has on customers and the ranking of candidate processes on their aptitude to be reengineered. Using these criteria the prospective cases were ranked, and the cases presented in rank order.

Conduct Pilot Case

This phase of the study included obtaining the archived documents, conducting the interviews, observing the team and department meetings and surveying team members and other stakeholders of the process. This work on the pilot process was focused to improve the data collection instruments and processes so that the following sub-case data could be collected efficiently and effectively. For the subsequent cases
the process was followed with only minor modification, to account for environmental and contextual differences of the process being studied.

Analysis of the case data began as soon as sufficient data was collected. The analysis included critiques and summaries of the archived documents, consolidation of interview data and observation notes, and an analysis of the survey data which included descriptive and inferential methods to test hypotheses based on the propositions. As the data was analyzed it was be added to a case study database that was organized so that data, information, documents and analysis can be readily retrieved based on a variety of search criteria. This case study database enhances study reliability and facilitates future research activity. The internal validity of the research can be enhanced by pattern-matching, explanation-building, using logic models and addressing rival explanations during the data analysis stage of the research.

Additional research questions were generated and the last part of conducting the sub-case study was to enfold the literature by comparing the data and analysis with existing theory.
Refine the Data Collection Instruments

This step in the process ran concurrently with the production of the pilot case, identifying ways to improve the quality of data collected, and the speed in which the data could be collected.

Perform Cross Case Analysis

After the cases were completed, they were compared with each other to identify patterns, build performance explanations, identify time-series relationships and assess logic model comparisons. If these cases replicate one another an argument supporting external validity can be defended. This extends the usefulness of the analysis results to a broader spectrum of the economy, and makes the results more amenable to support policy decisions required of the agency.

Assess Policy Implications

This stage of the analysis considered the results of the individual sub-cases and the cross case analysis to identify policy choices available to the ODE that impact organization structure and performance. In particular identifying additional opportunities that will improve organizational performance as a result of “reengineering” or establishing Baldrige principles deeper into the organization is the
objective of this assessment. The conclusions will be reviewed with ODE management prior to final publication.

Impact on Theory

In this stage an assessment of the conclusions from the sub-case and cross case analysis is undertaken to determine how these results support existing theory. Factors that might cause divergence from current theory are explored, as well as alternate explanations that would either support or conflict with existing theory. This conformation or dispute of theory will be supported with additional hypotheses to test and variables that could be identified and captured in future research.

Consolidated Report

This stage of the research is where the individual case reports, cross case analysis, policy implications and impact on theory components of the study are integrated and assembled into a final document, summarizing the consolidated results, key findings, and limitations of the findings. A consolidated report will be prepared for ODE use, separate from the formal dissertation excluding the literature review chapter and future research opportunities.
Summary

The data collection procedure identified in this chapter permits good construct validity and study reliability. Construct validity is enhanced through the use of multiple sources of evidence, the review of case reports by ODE management and the use of a case database permitting an audit trail for construct development. The data collection process increases reliability through the use of the case database and the study protocol; the identification of specific questions and topics addressed in archives, observations, interviews and surveys.

The data analysis supports internal validity by pattern matching among the sub-cases, using logic models to explain process and results, and explores rival explanations where appropriate.

The research design addresses external validity through the application of reengineering theory and replication of theory implementation in the different sub-cases.

These procedures coupled with the ability of the case study method to be opportunistic in taking advantage of the uniqueness of specific case environments, or unexpected findings as the analysis progresses will make for a robust analysis of the “reengineering” of the ODE.
Case Study: The Logic Model

In 1999 the ODE began a Performance Measurement Initiative with the goal of implementing the agency strategy through the performance measurement system to drive performance. This initiative was intended to be broadly based, connecting every employee and every function to the objectives of the agency. The mission, goals and objectives of the agency were first reviewed, revised and endorsed by the State Board of Education. Then the mission of the ODE was promoted internally by the agency by communicating to all employees that the ODE was going to raise expectations, build capacity and improve results, results being higher achievement for all students. The next step was to develop a “logic model” of the agency to identify the relationship between the desired result, the success indicators that lead to the result and the strategies used to achieve the result. The logic model identifies cause and effect relationships that lead to higher achievement for all students. By 2004, the agency logic model had been publicized throughout the agency and many managers had the model prominently displayed in their offices. A staff person had been hired to promote and manage the development of the logic model and its sub components as developed by each department. With the facilitation of this manager each department had started to develop more specific logic models for their department. These department logic models were more specific for their area identifying their programs and services, the strategies employed (planned) to achieve results and the indicators that are used to measure success. Success of each program could be linked to the results desired by the agency in pursuit of the mission. The Agency Logic
Model is presented in Figure 3.2, and the ODE Strategic Plan is presented in Table 3.8.

The concept of the logic model was formed when senior management adopted a new strategic plan with the priorities of raising student expectations, building educational capacity and improving the results of the education process. The model has three sections, the result expected of the organization, the indicators that lead to the result and the strategies employed by the ODE that cause the result. With the three priorities in place eight success indicators were identified that track how effectively the strategies are being implemented in achieving the primary objective (result) of the organization which is attaining “higher achievement for all students”. The senior management team identified indicators (with help from their staffs) to arrive at a set of indicators that was unanimously supported by the senior management team.

The model includes two primary indicators that directly affect student achievement:

(the numbers in this list are consistent with those used in Figure 3.2)

2) Students receive high quality instruction aligned with academic content standards.
3) Students have the right conditions and motivation for learning.

The model has six secondary indicators that work through the primary indicators to effect student achievement:

4) Through community engagement, students, families and communities understand, value and support the learning expectations and how they are measured.
5) Curricula in schools are aligned with academic content standards.
6) Educators receive professional development aligned with academic content standards and effective teaching and leadership strategies
7) Higher education prepares teachers and administrators to improve student achievement
8) School, home and community learning environments are safe, supportive and healthy
9) Schools provide effective intervention programs

A ninth indicator that affects all of the other indicators is:

10) Educators, families and student use data to make decisions that lead to improved student achievement

These nine broad indicators are what management believes are an adequate, sufficient and efficient means of monitoring agency performance to keep the organization on track to achieve higher performance for all students.

The strategy section of the logic model describes the way the ODE is exposing stakeholders to material and processes that will educate students. It has three primary strategies and nine secondary strategies. The primary strategies are:

11) Set high expectations for what all students should know and be able to do
12) Provide leadership, resources and build capacity
13) Measure progress and hold educators and students responsible for higher academic achievement.

The secondary strategies that influence the effectiveness of the primary strategies are:

14) Raise awareness, create understanding and generate support for what students should know and be able to do
15) Promote the alignment of what we expect of students with what is taught and tested
16) Provide regional, district and school leadership with the support needed to sustain academic improvement
17) Ensure that every school and classroom has educators who meet high quality standards
18) Promote the effective use of current resources and advocate for the resources needed to achieve high expectations for all students
19) Identify and promote educational practices that lead to improved student achievement
20) Ensure that the work of regional service providers focuses on Ohio’s standards-based educational system
21) Promote high quality educational options that lead to improved student achievement
22) Develop fair state tests aligned with academic content standards
23) Promote use of data to make decisions about teaching and learning
24) Develop and implement a fair accountability system that reports results and rewards successes

This model was adopted as an organization wide “map” of what and how the organization directs its resources. Each department has been charged with developing their own logic model identifying their results and how the department supports the agency logic model.
ODE MISSION:
RAISE EXPECTATIONS,
BUILD CAPACITY,
IMPROVE RESULTS

Standards Based Education
Set high expectations for what all students should know and be able to do.

Provide leadership, resources, and build capacity.

Measure progress and hold educators and students responsible for higher academic achievement.

SUCCESS INDICATORS (that will lead to the ultimate result)

1. Higher achievement for all students
2. Students receive high quality instruction aligned with academic content standards
3. Students have the right conditions and motivation for learning
4. Through community engagement, students, families, and communities understand, value, and support the learning expectations and how they are measured
5. Curricula in schools are aligned with academic content standards
6. Educators receive professional development aligned with academic content standards and effective teaching and leadership strategies
7. Higher education prepares teachers and administrators to improve student achievement
8. School, home, and community learning environments are safe, supportive and healthy
9. Schools provide effective intervention programs
10. Educators, families, and students use data to make decisions that lead to improved student achievement
11. Set high expectations for what all students should know and be able to do
12. Provide leadership, resources, and build capacity
13. Measure progress and hold educators and students responsible for higher academic achievement
14. Raise awareness, create understanding and generate support for what students should know and be able to do
15. Promote the alignment of what we expect of students with what is taught and tested
16. Provide regional, district and school leadership with the support needed to sustain academic improvement
17. Ensure that every school and classroom has educators who meet high quality standards
18. Promote the effective use of current resources and advocate for the resources needed to address high expectations for all students
19. Identify and promote educational practices that lead to improved student achievement
20. Ensure that the work of regional service providers focuses on Ohio’s standards-based educational system
21. Promote high quality educational options that lead to improved student achievement
22. Develop fair state tests aligned with academic content standards
23. Develop a system of fair accountability that reports results and rewards successes
24. Identify and promote educational practices that lead to improved student achievement

Figure 3.2 ODE Agency Logic Model
<table>
<thead>
<tr>
<th>Mission</th>
<th>Department Strategies</th>
<th>Success Indicators</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise Expectations: Set clear and high expectations for what all students should know and be able to do.</td>
<td>Set high expectations for what all students should know and be able to do</td>
<td>Through community engagement, students, families and communities understand and support the learning expectations</td>
<td>Higher achievement for all students</td>
</tr>
<tr>
<td>Build Capacity: Make sure that educators have the skills, knowledge, and resources to help students reach higher levels of achievement. Foster the ability of families and communities to help students succeed.</td>
<td>- Raise awareness, create understanding and generate support for what students should know and be able to do</td>
<td>Curricula in schools align with academic content standards</td>
<td>As measured by:</td>
</tr>
<tr>
<td>Improve Results: Measure, publicize, and reward results and hold</td>
<td>- Promote the alignment of what we expect from our students with what is taught and tested</td>
<td>Students receive high-quality instruction aligned with academic content standards</td>
<td>- Results of state level assessments disaggregated by groups of students</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Graduation rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Percentage and number of buildings moving into and out of School Improvement status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Percentage and</td>
</tr>
</tbody>
</table>

Figure 3.3 ODE Strategic Plan
<table>
<thead>
<tr>
<th><strong>Mission</strong></th>
<th><strong>Department Strategies</strong></th>
<th><strong>Success Indicators</strong></th>
<th><strong>Result</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>provide leadership, resources, and build capacity</td>
<td>- Provide regional, school and district leadership with the support needed to sustain academic improvement</td>
<td>Educators receive professional development aligned with academic content standards and effective teaching and leadership strategies</td>
<td>number of buildings that met Adequate Yearly Progress (AYP) in most recent year</td>
</tr>
<tr>
<td>- Ensure that every school and classroom has educators who meet high-quality standards</td>
<td>- Higher education prepares teachers and administrators to improve student achievement</td>
<td>Students have the right conditions and motivation for learning, including effective intervention strategies</td>
<td>Number of districts and buildings that improve rating from previous year</td>
</tr>
<tr>
<td>- Promote the effective use of current resources and advocate for the resources needed to improve student achievement</td>
<td>- School, home and community learning environments are safe, supportive and healthy</td>
<td></td>
<td>Number of districts and buildings showing Performance Index gain</td>
</tr>
<tr>
<td>- Identify and promote educational practices that lead to improved student achievement</td>
<td></td>
<td></td>
<td>National assessment (NAEP) results disaggregated by groups of students</td>
</tr>
<tr>
<td>- Ensure that the work of regional service providers focuses on Ohio's standards-based educational system</td>
<td></td>
<td></td>
<td>ACT/SAT participation rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACT/SAT scores</td>
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<tr>
<td></td>
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<td>Remediation rates at Ohio colleges and universities</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Participation rates in post-secondary education</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Percentage of students passing advanced courses (AP exams)</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Mission</th>
<th>Department Strategies</th>
<th>Success Indicators</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Promote high quality educational options that lead to improved student achievement</td>
<td>Measure progress and hold educators and students responsible for higher academic achievement</td>
<td>Educators, families and students use data to make decisions that lead to improved achievement</td>
</tr>
<tr>
<td></td>
<td>• Develop fair state tests aligned with academic content standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Promote the use of data to make decisions about teaching and learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop and implement a fair accountability system that reports results and rewards successes</td>
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</tr>
</tbody>
</table>

The Ohio Department of Education will be a high-performing organization that works to improve student achievement.

Revised July 2004
The logic model was widely distributed within the Department of Education and all employees were scheduled to have complimentary plans developed by September of 2002. This objective proved elusive as departments and individuals worked at different speeds and senior management required that department logic models were developed by department members, facilitated by ODE support staff (as opposed to being developed by consultants). The advantages of the process are that it fosters employee support of the plan and requires less selling to the stakeholder groups responsible for implementing and managing the plan once complete. The disadvantage is the time it takes to get all department plans developed and as of early 2005, there were still departments that had not finished developing their department logic models.

Operations

The operations functions within the agency have been subject to additional incentive to adopt and implement the logic model because the executive responsible for designing and orchestrating reorganization within the agency is also responsible for the operations functions of the agency. The additional exposure and pressure to lead the change effort within the agency is evident by the structural organization changes made (consolidating internal procedures and reporting relationships by creating support staff positions that report to a functional manager but are physically “imbedded” in the other center’s of the agency) and the emphasis on efficiency improvements within operation functional areas (e.g. reducing the time required to hire personnel, improving the efficiency of travel
expense reimbursement, conducting team building activities and improving the capacity and quality of the customer service department). These efforts impact the majority of agency employees and programs administered by the ODE and were (are) broadly communicated within the organization.

The operations department has two missions identified in the Logic Model that must be supported to achieve the agency’s goal of higher achievement for all students: 1) Support agency programs and 2) Improve enterprise effectiveness.

By supporting agency programs, ODE operations generates projects that allow the centers of the agency to more effectively assess, design and implement the programs that promote higher achievement for all students. To improve the efficiency of the organization, ODE operations implements projects that allow the centers of the agency to more efficiently administer the programs of the ODE.

The Operations logic models identifying these two objectives are depicted in Figures 3.4 and 3.5. Projects that were undertaken to support agency programs include the Instructional Management System, the Comprehensive Continuous Improvement Plan, the Connected Ohio Records for Educator’s, the School Finance Payment System and the Local Report Card Third Frontier P-16 Education Data Exchange. Each of these activities has an objective that is directly related to a strategy of the ODE Logic Model. For example, the Instructional Management System (phase II) is a project that will
enhance the alignment of what the ODE and other stakeholders expect of students with what is taught and tested in the classroom. [Strategy box 15 on ODE Logic Model (Figure 3.2)] This project establishes system wide “global” expectations of what students should know and be able to do [box 11 in ODE Strategies section].

With the new structure announced in early 2005 and efficiency projects and process reengineering activities beginning in the 4th quarter of 2004 and ongoing; the survey administered in March of 2005 included questions that are related to the implementation of the logic model, and in particular provide a base measure of the impact of the logic model on employee perception.

Table 3.8 lists fourteen questions asked of non-supervisory employees, covering topics in leadership, strategic planning, measurement analysis and knowledge management and process management that provide insight into performance management practices and perceptions. These questions are not specific to this logic model application but were derived from the Baldrige National Quality Award Preliminary Questionnaire.

These questions are also similar to questions asked in similar surveys administered in 1999 and 2002. Having a history of responses allows comparison with previous periods to identify changes that have occurred in the organization.
Standards Based Education

Set high expectations for what all students should know and be able to do.

Provide leadership, resources, and build capacity.

Measure progress and hold educators and students responsible for higher academic achievement.

Educators, families and students use data to make decisions that lead to improved student achievement.

---

**ODE Strategies**

1. Raise awareness, create understanding and generate support for what students should know and be able to do.
2. Promote the alignment of what we expect of students with what is taught and tested.
3. Provide regional, district and school leadership with the support needed to sustain academic improvement.
4. Ensure that every school and classroom has educators who meet high quality standards.
5. Promote the effective use of current resources and advocate for the resources needed to achieve high expectations for all students.
6. Provide leadership, resources, and build capacity.
7. Ensure that every school and classroom has educators who meet high quality standards.
8. Promote the alignment of what we expect of students with what is taught and tested.
9. Promote the effective use of current resources and advocate for the resources needed to achieve high expectations for all students.
10. Provide leadership, resources, and build capacity.
11. Educators, families and students use data to make decisions that lead to improved student achievement.
12. Educators, families and students use data to make decisions that lead to improved student achievement.
13. Measure progress and hold educators and students responsible for higher academic achievement.
14. Educators, families and students use data to make decisions that lead to improved student achievement.

**Support Agency Programs**

**Instructional Management System (IMS) Phase II**

Promote the alignment of what we expect of students with what is taught and tested.

**Comprehensive Continuous Improvement Plan (CCIP)**

Provide regional, district and school leadership with the support needed to sustain academic improvement.

**Connected Ohio Records for Educators (CORE)**

Ensure that every school and classroom has educators who meet high quality standards.

**School Finance Payment System (SFPS)**

Promote the effective use of current resources and advocate for the resources needed to achieve high expectations for all students.

**Local Report Card Third Frontier P-16 Education Data Exchange**

Educators, families and students use data to make decisions that lead to improved student achievement.

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Figure 3.4 Operations Component of Logic Model
Support Agency Programs
Figure 3.5 Operations Logic Model
Improve Enterprise Effectiveness Component of Logic Model
Logic Model: Empirical Data

In the survey that was administered in March of 2005, 37.2% of the operations employees responded to questions that were categorized in the leadership and strategic planning sections that relate to the use of the logic model. The questions and the responses are identified in the tables below. Table 3.8 lists the questions that were asked of non-supervisory employees and Table 3.9 lists questions on the same topics asked of employees that supervised other employees.
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>I know _____ of the ODE’s mission (what it is trying to accomplish).</td>
<td>3.61</td>
</tr>
<tr>
<td></td>
<td>I know _____ of my center’s (or office's) goals (what it is trying to accomplish).</td>
<td>3.61</td>
</tr>
<tr>
<td></td>
<td>The organization’s leaders _____ share information about the organization.</td>
<td>2.96</td>
</tr>
<tr>
<td></td>
<td>My organization's leader(s) _____ lets me know what they think are most important. (organization = center or office)</td>
<td>3.15</td>
</tr>
<tr>
<td>Strategic</td>
<td>I _____ refer to the ODE strategic plan.</td>
<td>1.66</td>
</tr>
<tr>
<td>Planning</td>
<td>I know the _____ of the parts of my organization’s plans that will affect me and my work.</td>
<td>2.79</td>
</tr>
<tr>
<td></td>
<td>I _____ know how to tell if we are making progress on my work group’s part of the plan.</td>
<td>2.94</td>
</tr>
<tr>
<td>Measurement</td>
<td>Performance measures are _____ communicated to me.</td>
<td>2.84</td>
</tr>
<tr>
<td>Analysis and</td>
<td>The overall quality of communications throughout the agency is _____ clear.</td>
<td>2.32</td>
</tr>
<tr>
<td>Knowledge</td>
<td>The overall quality of communications throughout the agency is _____ comprehensive.</td>
<td>2.16</td>
</tr>
<tr>
<td>Management</td>
<td>The overall quality of communications throughout my center (office) is _____ clear.</td>
<td>2.89</td>
</tr>
<tr>
<td></td>
<td>The overall quality of communications throughout my center (office) is _____ comprehensive.</td>
<td>2.81</td>
</tr>
<tr>
<td></td>
<td>Management _____ effectively communicates the impact and necessity of change before embarking upon new initiatives</td>
<td>2.23</td>
</tr>
<tr>
<td>Process</td>
<td>Important processes are _____ emphasized by management.</td>
<td>2.59</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Response scaled on a 1 to 5 range, with 5 as the best possible score.

Table 3.8 Employee Survey Questions linked to Logic Model implementation
<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Response*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>The number of our employees that know the Ohio Department of Education (ODE) agency’s mission (what we are trying to accomplish).</td>
<td>3.31</td>
</tr>
<tr>
<td></td>
<td>The extent to which there is organization wide commitment to the mission of the ODE.</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>The number of our employees that know our center’s or unit's mission (what we are trying to accomplish).</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Our leadership team _____ shares information about the organization.</td>
<td>3.14</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>I refer to the ODE Strategic Plan</td>
<td>2.02</td>
</tr>
<tr>
<td></td>
<td>The extent to which our employees know the parts of our organization’s plans that will affect them and their work.</td>
<td>2.45</td>
</tr>
<tr>
<td></td>
<td>The number or our employees that know how to tell if they are making progress on their work group’s part of the plan.</td>
<td>2.27</td>
</tr>
<tr>
<td>Measurement, Analysis and Knowledge Management</td>
<td>Performance measures (cost, schedule, performance) exist for each program (project).</td>
<td>2.38</td>
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<tr>
<td></td>
<td>Performance measures are clearly related to agency (ODE) goals.</td>
<td>2.92</td>
</tr>
<tr>
<td></td>
<td>Performance measures are clearly related to office goals.</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>Performance measures are reviewed at regular intervals for each program.</td>
<td>2.19</td>
</tr>
<tr>
<td></td>
<td>The number of our employees who know how the measures they use in their work fit into our office’s overall measures of improvement.</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>Our employees get the information they need, to know how our organization is doing. (organization = center, office, section or unit)</td>
<td>2.78</td>
</tr>
<tr>
<td></td>
<td>The overall quality of communications throughout the agency is adequate.</td>
<td>2.73</td>
</tr>
<tr>
<td></td>
<td>The overall quality of communications throughout my center (office) is adequate.</td>
<td>2.92</td>
</tr>
<tr>
<td></td>
<td>Management effectively communicates the impact and necessity of change before embarking upon new initiatives.</td>
<td>2.49</td>
</tr>
<tr>
<td>Process Management</td>
<td>Important processes are identified and communicated to my subordinates.</td>
<td>3.22</td>
</tr>
</tbody>
</table>

*Response scaled on a 1 to 5 range, with 5 as the best possible score.

Table 3.9  Supervisor Survey Questions linked to Logic Model Implementation
These responses provide a base level of perception within the operations department and indicate an opportunity for management to benefit from more effective communication about goals, performance measures and strategic emphasis within the operations department.

The 2002 Management Audit conducted on the agency had five similar questions in its survey of employees (listed in Table 3.10), and while this survey did not detail responses by department or by rank (supervisory versus non-supervisory) it does help to depict historical perceptions held by the employees of the agency.

The 1999 employee survey had only two questions related to a logic model and organization strategy (identified in Table 3.11) and when comparing the three surveys there is a downward trend between 1999 and 2005. These surveys are not directly comparable due to the differences in and number of questions but the decline in the averages scores is still an indication that supports the recommendation that additional communication would benefit the organization by creating a better understanding among employees of what the strategy of the organization is.
<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I understand the mission and goals of the Department</td>
<td>3.90</td>
</tr>
<tr>
<td>5</td>
<td>I understand the mission and goals of my division.</td>
<td>4.30</td>
</tr>
<tr>
<td>31</td>
<td>My performance goals are clearly documented.</td>
<td>2.83</td>
</tr>
<tr>
<td>20</td>
<td>Management effectively communicates the impact and necessity of change before embarking upon a new initiatives.</td>
<td>2.47</td>
</tr>
<tr>
<td>58</td>
<td>Department management effectively communicates with the staff.</td>
<td>2.78</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td><strong>2.83</strong></td>
</tr>
</tbody>
</table>

Response scale 1-5 (5 is best)

Table 3.10 Select Questions from 2002 ODE Employee Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODE’s vision, mission statement and goals are clearly communicated to all employees</td>
<td>3.86</td>
</tr>
<tr>
<td>I understand how the strategic plan’s vision, mission statement and goals pertain to my center/office and to my specific job</td>
<td>3.40</td>
</tr>
</tbody>
</table>

Response scale 1-5 (5 is best)

Table 3.11 Select Questions from 1999 ODE Employee Survey

These values indicate that there has been a slight decline in the perception of employees of the understanding of the agency’s mission and goals.
Agency Performance

Throughout this period the ODE has maintained and reported aggregate performance on “scorecards” that describe the impact of the organization on its ability to raise expectations, build capacity and improve the results of the public primary education system. A very positive trend of student achievement has evolved since 1999 when the strategy was adopted with the key result being “higher achievement for all students.” Since this time, composite performance scores for elementary and middle school students have risen from a 73.7 index value to 90.8 with steady year over year improvements. This performance is based on students being at least proficient in grade appropriate evaluations occurring in the 3rd, 4th, and 6th grades. This performance trend is depicted in Figure 3.6.

An alternative reason for the low 2005 score is the proximity of the survey date to an announced reorganization within the agency. A reorganization was announced to begin one month prior to the 2005 survey. Given that all departments were affected by this reorganization, the need for communication was significantly higher during this time.
The performance index was introduced in the 2003-2004 academic year to include the achievement of every student registered in the school system, with school districts earning points based on how well each student does on all tested subjects in grades 3, 4 and 6. All the achievement tests have five performance levels – advanced, accelerated, proficient, basic and below basic/limited. A student score at the advanced level earns 1.2 points. An accelerated score earns 1.1 points. A proficient score earns 1.0 point. A basic score earns 0.6 point. A below basic/limited score earns 0.3 point. Students who are not tested earn zero points. All the points earned by a school or a school district are averaged and multiplied by 100 to generate a school and district index.
In addition to aggregate performance, performance indicators are also reported in different categories to detail student performance as reported in the aggregate measure plus additional exam results given in high school, high school graduation rates and general attendance. These indicators have evolved from year to year and in 2005 included 23 measures using the information contained in the index plus testing results from grade 10, high school graduation rates and school attendance. These indicators are presented in Table 3.12.

The data presented in Table 3.12 is graphed to show trends for Grade 4, 6, 10, attendance and graduation rates in Figures 3.7 through 3.10 and show that there is a trend of improving performance in all grades with the exception of 10th grade in 2005.
Report Card Performance

Ohio Department of Education

Students at or above Proficient Performance Level

<table>
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<td>-</td>
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<td>-</td>
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<tr>
<td>Reading</td>
<td>65.9</td>
<td>74.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Science</td>
<td>60.9</td>
<td>70.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Writing</td>
<td>82.9</td>
<td>87.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Attendance Rate</td>
<td>93.6</td>
<td>93.9</td>
<td>94.3</td>
<td>94.5</td>
<td>94.5</td>
<td>94.3</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>80.7</td>
<td>81.2</td>
<td>82.8</td>
<td>83.9</td>
<td>84.3</td>
<td>85.9</td>
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</table>

Table 3.12 Report Card Performance
Figure 3.7 4th Grade Performance

Figure 3.8 6th Grade Performance
Figure 3.9 10th Grade Performance Trend

Figure 3.10 Attendance and Graduation Rate Performance
Discussion

The performance indicators and the performance trend over the last six years clearly demonstrate improvement achieved by the students enrolled in the public school system. Logic and theory suggest that the changes made in the operation of the ODE are a factor in achieving that improvement. The Logic Model identifies factors that contribute to student performance, specifies indicators that measure the level of these factors present at a given time and identifies a strategy to improve the factors thus resulting in improved student performance. In fact none the activities undertaken by the ODE were actions that directly affect students.

The employee survey indicates that employee perception of the operations employees is not as good as it could be, and seems to contradict improving student performance. One potential explanation for this inconsistency could be attributed to the timing of the survey. A reorganization was announced one month before the survey was administered, which created uncertainty among employees as to what functions they would be performing and how the changes in the reporting structure in the organization would affect them. This uncertainty could have lowered the scores of the survey. A second potential explanation is that the effect of the ODE employees on student performance is too small to make a difference. In this case the scores could accurately reflect the perception of employees. Another explanation is that not enough time has passed to be able to see the impact of changing employee perception on student performance. Given
that student performance is measured on an annual cycle, time lag from action to result is 
clearly a factor in assessing student performance change resulting from a change in the 
way the ODE operates. In 2007 this improving trend has continued which suggest that if 
the time lag is a factor, the decline in ODE employee perception was not significant 
enough to negatively impact student performance.

The logic model implies that ODE Operations employees make a difference in improving 
student achievement through: providing support to sustain academic improvement (logic 
model box 16), promoting effective use of current resources (logic model box 18), 
promoting the use of data to make decisions about teaching and learning (logic model 
box 23) and develop and implement a fair accountability system that reports results and 
rewards successes (logic model box 24). The Operations department has developed 
additional strategies to support the execution of all the ODE strategies using the rationale 
in the logic model to guide their priorities.

The objective of the agency is to raise the achievement of all students and the agency 
spends more than $13 billion dollars a year in pursuit of this objective. In 2005 the 
agency was building a database to permit the evaluation of strategy at multiple levels in 
the organization, creating the department logic models, identifying the performance 
indicators and establishing performance standards and goals that can be used to assess 
performance change over time. Changes in operating processes can be implemented 
rather quickly, but the key performance of the organization cannot be determined quickly.
Student performance in standardized testing occurs only on an annual basis and changes that are made to programs that support student performance may take more than one full year to be realized in student performance. For example, a program instituted by operations to more efficiently distribute grant funds, could provide an administrative cost savings that could be used to fund teacher training for 10th grade science teachers. Assuming the training was perfectly implemented, and incorporated into the teaching plan at the beginning of the school year following the funds being available, the earliest possible results would be available nine months after the school year started. In a typical change process the cycle is more likely to be two or three years before the benefit or cost of a particular action is realized. This dynamic encourages conservative approaches to implementing change in the system.

Case Questions

In the ODE’s quest to improve student achievement, what role should Operations play in achieving the mission? What cost would be paid if Operation’s roles were not performed? What steps are necessary to further tie the performance of operations to the performance of the agency and the performance of students in the school system?
Case Note

The discussion questions should be used to motivate discussion of the performance measurement system and how ties to the Agency logic model can instill accountability and “esprit de corps” among the employees and other stakeholders. Topics of relevance include the time factor and how more timely feedback mechanisms must be used to give interim performance assessments; the ways that processes that indirectly (or even remotely) effect students can still be a factor in student performance; the costs of making wrong decisions and the various strategies that can be used to provide flexibility in the implementation of projects to accommodate environmental differences. (Schools/school districts have different facilities and resources available to address a specific need) The independence of school districts (and their administrators) create an environment where the State Board of Education has to motivate the districts to perform some tasks and the use of persuasion, through data, analysis and expert authority should be a part of the case discussion as well.

An emphasis in the discussion should be placed on the availability of accurate data to be used in making decisions. A discussion about the consistency of data is important and the complexity of implementing consistent definitions across a statewide system is a key point in driving the use of data to make decisions. An example of how definitions can vary from school district to school district using attendance can be helpful in highlighting how inconsistent data can be reported; if not corrected this data can be misleading.
resulting in poor decisions. School District A has a policy that a student is absent if they are absent for the first two full class periods of the day; School District B has a policy that a student is not considered absent for the day until 11am. Over the course of a school year, School District A would have higher absenteeism even if the students arrived at the same time during the school day. School District B, not realizing the extent of their absentee problem may direct resources that could have been used to address the problem to an area that does not provide them with an equivalent performance return in student attendance. With the implementation of the No Child Left Behind Act, attendance has become a key indicator of school system performance and having definitions that are not consistent on a statewide system leads to inaccurate data that if used for making decisions can result in poor decisions.

While not a key component of this case, the topic of standardized testing frequently comes up in discussions of school and student performance. There has been considerable debate over whether the standardized test is an accurate evaluation of a student’s ability or potential. The test instrument and the knowledge tested will change over time creating questions about the validity of the test instrument. This case is not intended to be a test bed for this discussion. The tests and the conditions in which they are given are factors in a student’s performance on the test, but in any possible scenario an objective (as objective as possible) method of evaluating the student must be used to gage the performance of the system.
Case 2: Reorganization in Operations

There has been a lot of change in the operations of The Ohio Department of Education (ODE). The Operations Department has become more responsive to the needs of ODE, has increased staff in needed areas like information technology and customer service and become more efficient in some of the backroom tasks like travel expense reimbursement and hiring personnel. With all these changes there is still some confusion among the employees about what the organization is doing and why. These were some of the thoughts going through Steve Burigana’s (Chief Operating Officer) mind as he reviewed the strategy of the organization and the accomplishments of the last 24 months. Change is never easy in organizations that have a lot of history of doing a task in one way; yet the changes in the operations department have been fairly well received and accepted. In some cases the changes were even lauded. The challenge now is to keep this momentum going to fully leverage the changes initiated to implement the strategy and support (create) a more efficient and effective department of education.

Background

The internal operations function of the ODE is made up of 6 departments; accounts, communications, customer service, facility management, human resources and information and technology. As a group they are responsible for the support tasks and
infrastructure of the agency. Operations reports to the Superintendent of Public Instruction, the equivalent of a chief executive officer in a corporation, and as a group, operations, represent 47% of the agency’s personnel.

Accounts

The accounts department, responsible for the financial reporting, payment and purchasing functions of the ODE is a large department with 51 full time positions including 6 managers/supervisors. The department has a core group of fiscal specialists that handle the basic accounting functions and special projects (21 positions) and a group of fiscal “imbeds” who are physically located with the center (department) of the agency that they support (22 positions). For example a fiscal specialist “imbedded” in the Center for Curriculum and Assessment would have a desk in the area with the Center for Curriculum and Assessment employees, away from the core fiscal specialists. The third group in this department is the purchasing group located in the core area (5 positions).

Communications

Communications is the department responsible for contacts with the public and other stakeholders regarding the programs and activities of the ODE. The 18 employee unit has 3 sections, Public Information (6 positions) assigned to the centers of the ODE, Visual Communications (6 positions) responsible for print and electronic media and Public Information general (3 positions) which are positions at large that can handle ad hoc assignments and provide support to the other areas.
Customer Service

Customer Service is responsible for responding and directing the phone inquires the department (ODE) receives, either answering the question or directing the inquiry to the appropriate person within the agency. Customer Service employees are located in the reception areas of most floors as well as a separate area for back-up support. There are 13 full time positions in the area.

As this research was being prepared, this function is evolving, growing from answering the general phone calls to the ODE to answering phone calls to specific departments (centers) in addition to the more general calls. Many of the centers in the agency had their own 800 information phone lines that were being transferred to the customer service department of operations. As more centers are added, staffing is being changed to accommodate the increase in workload.

Facilities Management

Facilities Management has 3 principle areas, facility (building) management (3 positions), mail and courier services (5 positions) and document services (3 positions). The document services area manages the records retention program, insuring the process of maintaining documents for the appropriate length of time before they are destroyed. Facilities Management has the responsibility of insuring staff has the basic physical tools
necessary to perform their tasks (e.g. a desk, office, phone etc.), manages copiers and provides basic office supplies for the organization.

Human Resources

The Human resources area has 13 positions providing all the hiring / exiting processes used to staff the agency and manages the traditional HR functions like contract management (union), payroll and organizational development. Four of the department’s employees are “imbedded” into centers and are located in office areas apart from the other Human Resources staff.

Information Technology (IT)

A director of operations is responsible for information systems, data services and project management the 3 segments of this department. The information systems area is the largest group with 47 full time positions, responsible for network, infrastructure and general IT needs. Data Services with 35 full time positions, including 17 “imbeds” is the next largest area, providing data analysis and database management functions. Project Management is the smallest area with 4 full time positions, providing ad-hoc support to miscellaneous center or agency-initiated projects. The 88 positions in this area represent 11% of all ODE staff.
This organization structure is new for the ODE, as the embedded positions were created and staffed beginning in the 2\textsuperscript{nd} quarter of 2004. In the prior organization structure each center had personnel assigned to perform the required support functions on an ad-hoc basis. Generally, the same personnel were assigned to do particular types of tasks in the new organization structure as the old, although the center was responsible for staff assignments in the old structure. The work done in these areas had to be approved or corrected by the staff in the core area of responsibility (accounts, communications, human resources, facilities or information technology).

One reason for the reorganization was the realization that the system was inefficient at performing routine tasks (e.g. it took in excess of 300 days to hire a new employee from the time the initial requisition was completed). The new organization, by placing process expertise in each center, eliminated the need for extensive checking of the documents required in the old organization and facilitates communication between the centers and core support functions.

There are many examples of how this new organization has adapted to resolve a problem that was causing individuals in operations problems and creating waste in the ODE by not using resources as efficiently as possible. Two examples are described that demonstrate the potential that exists when employees are given the authority to study a problem, develop, and implement a solution.
Case 2A: The Accounts Group Reorganization

The Accounts Group is one of the most structured process oriented departments within ODE. In managing the finances of the agency, they are required to follow the regulations of the Department of Administrative Services of the state, federal education regulations and meet the standards of general accounting practices. An example of the uniqueness of these regulations is the federal requirement that a maximum of 2 days of cash on hand is available to fund programs (applies to federally funded programs). The intent of regulations like this is to motivate the agency to be a conduit of funding, benefiting schools and students while minimizing the opportunity for administrative costs or fees to reduce the funds available for each school/student. To meet this requirement requires tighter financial control than what would be used in the private sector, and additional records that must be maintained to satisfy the federal reporting requirements.

Traditionally the most important performance criteria in the accounts group have been the time it takes to issue payment to a school/school district approved for project funding, and the error rate in completing the process. Reports were published regularly indicating the time it took to process payments, the number of errors, classification of errors and volume of transactions. In addition, the spending totals were tracked versus the planned spending to identify if programs were off their spending plan. The budget year started on July 1 and carrying over funds from one year to the next required extra communication and diligence to avoid returning unused funds to the state or federal government. Minimizing carryover is a goal of the accounts group.
Within the ODE this department was perceived to be a leader in adopting and implementing change. The department was identified for change in 1999 when the process of making payments to school districts was streamlined and simplified. With the reorganization of 2004, more processes could be streamlined, utilizing the imbedded staff to reduce errors and provide more expertise on a consistent basis to the centers of the ODE.

Shortly after the reorganization was announced (March 2004) the new accounts department was called into a meeting to go over the organization structure, introduce management/supervisors and give an overview of how the organization would work. One key objective was delineating how work was done in an office (imbed) and how it was done in the core (employees that were not imbedded) group to all of the employees involved in a process at one time. It was discovered that employees with similar responsibilities in different locations had developed different ways to do the same tasks, and an objective of these meetings was to highlight these differences. This meeting was continued to follow-up meetings with good audience participation in reviewing the similarities and differences between the imbeds and the core support group. A key product of this process was the identification of processes that the group wanted to reengineer, based on their experience implementing the policies and processes of the agency. These processes were the source of many of the complaints that the fiscal service department had to respond to or address on a regular basis. Processes identified for
reengineering included the certification and licensure revenue process, the process to create and process contracts for vendors to the agency, the process to receive and record checks to fund department activities, the process to receive and record grant revenue, the process to receive revenue for school finance, the process to receive subsidy payments for federal and state funded programs, and the process to reimburse employee travel expenses. These processes represent some fairly simple (relatively) processes of the department (travel reimbursement) and some complex processes (subsidy payments for fiscal services) with the more complex processes having larger numbers of individuals involved in the process, more activity steps and more decision points.

To perform the reengineering, teams of employees consisting of volunteers and recruits that had firsthand experience with the process were created and assigned a facilitator. Each team began by mapping the existing process. This was an iterative effort, with a cycle consisting of developing the map, reviewing it with coworkers, making revisions and reviewing them as a team. This resulted in a process map supported by a consensus of the group. During this process a key revelation by the team was the complexity of what was often thought to be simple processes. For example, identifying thirteen process steps and seven decisions in order to process a travel expense form, was a surprise to most of the team members who only worked with one part of the process. Once the existing process was documented, a new process could be designed, meeting the needs of the final product and eliminating steps that did not provide value to the department. Steps that were eliminated were typically transaction reviews that were no longer needed,
eliminating the routing time and waiting time for this action. The new process was designed by starting with the desired outcome and including only those steps required to produce the product. Using the team to design the process, all of the stakeholders of the process had the opportunity to include their needs in the process design. The process map for the travel reimbursement is included as an example of the new process.
Travel Reimbursement Revised
Thursday, July 01, 2004

Provide traveler w/ rules/procedures

Traveler to fill out Form OBM 7148 & adhere to ODE policy & sign it & hold copy for all documentation

TER to fiscal team verified for correctness

TER initialized & coded

TER is approved & verified by supervisor i.e. dates, location

TER corrected & resubmitted

Date stamped in as received and put in mailbox

Accounts verified?

Proceed into CAS

Yes

No

F.S. corrects & initials changes

- Hold - requests corrections - e-mail/phone calls

- Returns to center fiscal staff for corrections

No?

Travel is approved by OBM?

Yes

No

Systems check for cash availability

Payment goes to auditors for processing

Checks & EFTs are picked up & delivered to ODE F.Serv.

F.S. verifies payment against warrant JOMR. & voucher

Copy of payment and TER to center/program staff by "acknowledge of warrant received" signed form

-F.S. mails payment to off site staff

Original voucher has warrant # or EFT w/ payment date recorded stamped "paid" & warrant journal attached

Yes

No

Voucher accepted & printed

Voucher approved by fiscal officer?

Yes

No

Voucher returned w/ note for correction

Copy of voucher w/ backup sent to O.B.M.

-F.S. retains original & TER copy until payment is received

Original voucher w/ original backup TER

-Copy w/ backup copy (TER)

-Copy TER only

ALL to F.S. / DOA

Figure 3.11 Travel Reimbursement Process Flow
Case 2B: Human Resources Organization

The Human Resources (HR) area had historically been a reactive department handling the personnel issues of the ODE as they became problems. Officially there were no performance measures identified with the area, beyond the perception of how quickly and satisfactorily complaints were resolved. These subjective measures are being replaced in the reorganization with the input of the department in the creation of a department logic model that supports the agency logic model. The logic model was used to identify a number of areas where tactical plans could be developed to achieve the objectives of the logic model. One example of this type of analysis is depicted in Figure 3.11. The focus of the department was on box #6 “Quality ODE Workforce, Qualified to do their Jobs.” Two complaints that the department had undertaken to resolve were 1) Improve the length of time required to fill a vacant position and 2) Utilize the Oracle Time and Attendance capability of the database management system recently implemented in the agency.

The first objective noted above was to reduce the amount of time required to identify, interview and hire staff for the agency. While the new organization would implement the process, there was confusion of what was required to have a new employee start work and the communication required between departments to insure error free, efficient employee start dates. To understand the process a team was formed to document the process and identify ways to improve it. The process was defined as starting with notification from the hiring department to HR that a position needed to
be filled, and ended with new employee orientation during the first few days of the employees’ engagement. The team was formed with representatives of various departments being on the team. A summary of the process is depicted in Figure 3.12 which identifies 55 steps that occur between the time a request for a new employee is created and the time the new employee accepts the offer and unsuccessful candidates are notified. Supporting this summary process flow analysis, much more detailed process steps were documented to allow the process to be thoroughly analyzed by the process team.

Figure 3.12 Ensuring a Quality Workforce
Position Description Questionnaire (PDQ) and Position Request Form (PRF) is obtained from Human Resources, or via the Intranet, and filled out by the employee vacating the position or the supervisor of the position.

Completed PDQ and PRF are submitted through the signature process.

HR receives the completed packet and date stamps it in Review by HR Office Assistant or Administrative Assistant for completeness.

Not complete Packet is returned to the Associate Superintendant.

Complete PRF is submitted to HR Director.

HR Director verifies “ceiling”

No Ceiling: Position is on hold until vacancy becomes available; this is communicated to the Associate Superintendent.

Ceiling available: HR Director reviews.

Responsibility
- Human Resources
- Center
- HR/Center joint effort
- Candidate
- Outside influences

Figure 3.13 The Hiring Process
Position Description (PD) and Vacancy Posting are written by HR Director or Assistant Director.

Off

Ice Assistant requests listings from DAS

- certification (cert)
- provisional
- layoff

Structured interview questions are drafted by HR

Draft questions are submitted to Associate Superintendent, or designee, for review

Questions are finalized for the interview

Position Description (PD) is sent to DAS for approval

HR creates the position online

Position is posted via:
- Email (internal)
- OLEAP (external)
- By request
- Newspapers
- Journals
- Websites
- Professional organizations
- Educational institutions
- Other

HR folder is prepared
- PCN/posting deadline on label
- Stapled copy of posting to front of folder

Receive applications
- Date stamped as they come in, whether hand-delivered or mailed
- Notate date on electronically submitted (OLEAP) applications

Applications are entered in the Applicant Tracking database

Responsibility
- Human Resources
- Center
- HR/Center joint effort
- Candidate
- Outside influences

Figure 3.13 continued
Figure 3.13 continued

- **Bargaining unit applications**
  - Sorted internal vs. external
  - Sorted by promotion, then lateral, then demotion
  - Review and sort by Minimum Qualifications
    - Review and assign seniority information
      - PR 28 & above – Qualifications, Education and Experience
      - PR 27 & below –
  - Final application review is done by Assistant HR Director

- **Non-bargaining unit applications**
  - Sorted internal vs external
  - Review for Minimum Qualifications

**Qualified applicants?**
- **NO**: Advise Associate Superintendent; go to Recruiting sub-process
- **YES**: Prepare application packet for
  - HR invites Associate Superintendent, or designee, to review the application packet

**Responsibility**
- Human Resources
- Center
- HR/Center joint effort
- Candidate
- Outside influences
HR schedules interviews i.e., time, place, and panel
- HR Director = Director and above
- HR Assistant Director or designee = all

Interviews are conducted

Applicant is recommended

Center completes Application Nomination form

Reference Checks are completed
- Currently, reference checks of support positions are done by HR. Reference checks of Consultant 3 and above are done by the Center
- **Recommendation** – HR conducts all

Applicant Nomination form, reference check form and all other materials are returned to HR

Final review of applicant package by HR

HR Director and Associate Superintendent determines hourly rate

Notify Associate Superintendent or designee

HR will coordinate with the candidate and make a tentative offer, contingent upon background/drug screening results

Continued
This entire process takes a minimum of 12 weeks!
Within the HR department the average time to hire an individual in 2001 was in excess of 50 days plus any additional time required for reviews outside of the HR department. In 2005 the average time is 22 days.

![Figure 3.14 Average Number of Days to Identify and Orient New Hires](image)

When the observations of the changes that were implemented in this department are compared with the survey results, it is interesting to note that employees feel less empowered to make changes in the process that affect their work than in previous surveys. This result contradicts the observed data and may be caused by the reduction of individual ability to effect change compared to the team consensus now required to implement change.
Case 3: Leadership

The Baldrige Criteria, Total Quality Management (TQM), and many other theories on the effect of quality on organizational performance include leadership as a significant component of successful organizations. The Malcolm Baldrige National Quality Award Criteria recognizes leadership through the 120 points (12%) assigned to the category and measures leadership through the perspectives of the leaders and followers of the organization. In TQM researchers consider the support of senior management an important dimension in creating continuous improvement in organizations (Powell 1995, Flynn et al, ….). Competing Values theory, Reengineering, the Balanced Scorecard and Service Quality all specifically mention the importance of having a champion, sponsor, supporter or motivator of employees to reach the objectives of the organization.

The ODE is no different; leadership has been a critical catalyst in the change experienced in the organization. Peter Northouse defines leadership as being “a process whereby an individual influences a group of individuals to achieve a common goal;” in the ODE the leadership has created a climate to encourage organizational change. Managers feel empowered to make changes that improve the organizations performance, with an expanded perspective of organization performance as opposed to just a department, functional or personal perspective. One aspect of the manifestation of this empowerment is the “Logic Model” described in the Logic Model Case. While the framework for the goals and strategy was determined by
senior management, the details of identifying internal performance indicators and developing the strategy and tactics at the department and functional levels of the organization were left to management, staff and other employees at those levels. This culture is evident in the individual discussions held with a sample of managers and supervisors at all levels of management. It is also evident at staff and department meetings where decisions were discussed and plans developed to implement them.

The inclusion of any interested employee into this process was used to build support for the organization’s objectives from the bottom up, as well as provide another conduit of information for those employees to share their opinions and facts (of the evolving organization) with those who choose not to participate directly in the process. The process provided a communication conduit in the other direction as well, increasing the awareness within the organization of the vision and goals adopted by senior management. Having a perspective that allowed a much broader understanding of the objectives of the organization became a factor in many meetings where the group was assessing the value of the activity under study.

Specifically a leader sets a course of action and allows/encourages others to propel the organization along the course. At the ODE the course is the mission which was revised in 1999, approved by the State Board of Education and communicated to all employees. Communication is a key aspect of leading, (Northouse, Powell ) and must occur in multiple formats on a regular basis to be integrated into the fabric of
regular activities. At the ODE this communication occurs at the annual “All Staff Meeting”, regular senior management meetings, staff meetings and monthly bag lunch meetings hosted by the superintendent celebrating employees born in each month.

The mission has been written and distributed to all employees, posted on the web site and discussed in the department newsletter on multiple occasions. It appears on flyers posted in the building and posted on the office walls of employees all over the building. In conversations with a sample of managers and supervisors the mission and objectives are well known and understood by a majority of the individuals queried.

In the surveys sent to employees there were 11 – 12 (employees had 1 more question than managers) questions asked about leadership, with the majority of the questions about mission, and communication. The survey emphasized communication in the same way as the Baldrige Award Criteria.
<table>
<thead>
<tr>
<th>Management Questions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The number of our employees that know the Ohio Department of Education (ODE) agency’s mission (what we are trying to accomplish).</td>
<td>3.14</td>
</tr>
<tr>
<td>2. The extent to which there is organization wide commitment to the mission of the ODE.</td>
<td>2.93</td>
</tr>
<tr>
<td>3. The number of our employees that know our center’s or unit's mission (what we are trying to accomplish).</td>
<td>3.08</td>
</tr>
<tr>
<td>4. Our leadership team _____ creates a work environment that helps our employees do their jobs.</td>
<td>3.40</td>
</tr>
<tr>
<td>5. Our leadership team _____ shares information about the organization.</td>
<td>3.16</td>
</tr>
<tr>
<td>6. Our leadership team _____ encourages learning that will help all our employees advance in their careers.</td>
<td>3.08</td>
</tr>
<tr>
<td>7. Our leadership team _____ lets our employees know what is most important.</td>
<td>3.23</td>
</tr>
<tr>
<td>8. Our leadership team _____ asks employees what they think.</td>
<td>2.94</td>
</tr>
<tr>
<td>9. Our center or unit leaders are _____ responsible for leading process improvement.</td>
<td>3.15</td>
</tr>
<tr>
<td>10. Senior managers are _____ accessible to customers.</td>
<td>2.97</td>
</tr>
<tr>
<td>11. We _____ use performance feedback to improve the quality of our processes (products).</td>
<td>2.81</td>
</tr>
<tr>
<td>Average</td>
<td>3.08</td>
</tr>
</tbody>
</table>

1=poor, 5=best

Table 3.13  Survey Questions on Leadership – Supervisor
<table>
<thead>
<tr>
<th>Employee Questions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know _____ of the ODE’s mission (what it is trying to accomplish).</td>
<td>3.55</td>
</tr>
<tr>
<td>I know _____ of my center’s (or office's) goals (what it is trying to accomplish).</td>
<td>3.6</td>
</tr>
<tr>
<td>I am committed to achieving _____ of my department’s (center’s) goals.</td>
<td>4.37</td>
</tr>
<tr>
<td>My senior (top) leaders use our agency’s values to guide us _____ of the time. (agency = ODE)</td>
<td>3.26</td>
</tr>
<tr>
<td>My senior leader(s) create a work environment that helps me do my job _____ of the time.</td>
<td>3.25</td>
</tr>
<tr>
<td>The organization’s leaders _____ share information about the organization.</td>
<td>3.11</td>
</tr>
<tr>
<td>My senior leaders _____ encourage learning that will help me advance in my career.</td>
<td>3.07</td>
</tr>
<tr>
<td>My organization's leader(s) _____ lets me know what they thinks are most important. (organization = center or office)</td>
<td>3.22</td>
</tr>
<tr>
<td>My organization's (center or office) leader(s) _____ ask what I think.</td>
<td>2.90</td>
</tr>
<tr>
<td>Management _____ focuses on improving student performance.</td>
<td>3.35</td>
</tr>
<tr>
<td>Organization values are _____ communicated. (organization = center or office)</td>
<td>3.06</td>
</tr>
<tr>
<td>Management _____ encourages employee involvement in community issues.</td>
<td>2.66</td>
</tr>
<tr>
<td>Average</td>
<td>3.28</td>
</tr>
</tbody>
</table>

1=poor; 5=best

Table 3.14 Survey Questions on Leadership – Employee

The averages indicate performance that is below the Baldrige benchmark, provided by the administrators of the award criteria; which had an average benchmark score of 3.85 for employees and 3.86 for managers. While the results of the survey indicate that there is opportunity to improve this category of management practices, the scores are positive indications of the success of the efforts undertaken prior to the survey. In the four questions relating to communication (Manager questions 4, 7, 8, 11; Employee questions 6, 8, 9, 11) the ODE averages are 3.04 and 3.07 for the manager and employee respectively. The benchmark responses for these questions are 3.68
and 3.64 for the manager and employee respectively. In these categories the ODE does not meet the reported benchmark.

Another indicator of leadership is the progress made toward achievement of the goals, objectives and vision of the organization. In this regard the ODE has made significant progress. The organization publishes “report cards” each year identifying the progress made towards the vision of “Higher Achievement For All Students”. The indicators used have evolved over time to accommodate changing laws (No Child Left Behind) and other management fine tuning to reduce the number of indicators to a parsimonious, easily communicated and easily understood set of variables. One of the challenges of the department described earlier is identifying the various stakeholder groups all which must be communicated to in an accurate, understandable manner. The stakeholders include students, parents, school districts, the legislature, the governor, the federal government, etc. who comprise a very diverse population relative to their needs and demands of the education system. A typical report card table is presented in Table 3.12 on page 120 and in graphical form in Figures 3.7 – 3.10 on pages 121 and 122. The ODE compiles student performance into an index to present one aggregate measure of student performance which has also shown marked improvement from 1999 through 2005. This index is presented in Figure 3.14. The performance measures discussed thus far are all internal measures of improvement that focus on the objective and goal of “Higher Achievement for All Students” but the ODE also compares the students and the teachers with the rest of
the nation to insure that the state improves at or above the rate of the country.

Examples of these kinds of measures include comparing ACT scores of Ohio students with those of the rest of the nation and tracking the number of teachers that meet the federal guidelines of highly qualified teachers. The class of 2006 had ACT scores that were higher than the national average in every category, English, Math, Reading and Science Reasoning. While this is a new measure for the state and is not a comprehensive measure of every student’s experience in the public education system, it does give a comparison of how the state’s students compare with students from other states that are likely to attend college.

Figure 3.14 Composite Student Performance
Figure 3.15 Class of 2006 ACT Results

The percentage of teachers that meet the federal definition of “Highly Qualified” is another indicator that is used by the ODE to gauge the performance of the education system. ODE has an objective of having 100% of the teachers licensed by the state achieve this credential. This statistic has averaged 93% between 2003 and 2006 and the ODE has plans in place to achieve 100% via the implementation of 68 tactical plans organized around 9 themes. These plans range from practices to recruit and hire new teachers to continuing education and recertification of existing teachers.

The ODE has a large number of performance measures, some required by the various parts of the government and others used to maintain operational performance and inform stakeholders about how the education system is meeting the needs of the state. Leadership has examined the many indicators that could be used and through the
development of the logic model has determined a parsimonious set of key indicators that meet the needs of all of the distinct stakeholder groups.

In addition to the general comparisons used to determine the effectiveness of the performance of the State Education system, the management of the ODE participates in gathering data for other external assessment reports. In an independent assessment of state education systems published in Education Week, all states were assessed and ranked incorporating a much broader perspective of the components that combine to make a successful citizen. For example some of the success indicators that were included in their analysis are: family income, parent education, linguistic integration, annual income, and steady employment. These general economic statistics are not controllable by any education system and effect the experience of the student. The ranking of the Ohio Education System as reported in 2007 is summarized in Table 3.15.

<table>
<thead>
<tr>
<th>Category</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Indicators</td>
<td></td>
</tr>
<tr>
<td>Chances for Success</td>
<td>27</td>
</tr>
<tr>
<td>Education Alignment Policies</td>
<td></td>
</tr>
<tr>
<td>Aligning education from cradle to career</td>
<td>20</td>
</tr>
<tr>
<td>Achievement Indicators</td>
<td></td>
</tr>
<tr>
<td>Elementary and Secondary Performance</td>
<td>10</td>
</tr>
<tr>
<td>State K-12 Policy Indicators</td>
<td></td>
</tr>
<tr>
<td>Standards, Assessments and Accountability</td>
<td>18</td>
</tr>
</tbody>
</table>

Table 3.15 Quality Counts Assessment of State Education Systems
These performance measures support the conclusion that the ODE has effective leadership as they are achieving good results, measured internally and externally by the ODE and validated by measurements made independently by other organizations.
CHAPTER 4
RESULTS AND ANALYSIS

Introduction
In this chapter the analysis conducted on the results of the survey administered are presented and compared with past survey results to identify changes in employee perception over time. The analysis then examines how the responses differ from the Malcolm Baldrige Benchmark responses and the last section discusses the similarities and differences between the cases generated. This analysis allows the information collected to be generalized so that other organizations may benefit from the actions and results obtained by the ODE.

Survey Results Analysis
The employee survey (Table 3.6) consisting of 69 questions for non-supervisory employees and 84 questions for employees that managed 2 or more full time ODE employees (Table 3.5) was available to all employees to fill out during three weeks beginning on April 15, 2004. The survey was modeled after the Baldrige “readiness” survey and a previous survey administered to ODE employees in 1999. The survey received 390 responses, a 49.1% response rate.
Responses were received from each department or center within the agency, with the lowest department or center response rate being 34% and the largest 68.8%. In the departments with the largest number of employees, The Operations Department, The Curriculum and Assessment Department, and The Students, Families and Communities Department the response rates were 46.9%, 56.1% and 46.7% respectively. The response rate by department is listed in Table 4.1.

Survey Response Rate

<table>
<thead>
<tr>
<th>Department or Center</th>
<th>Responses from Department or Center</th>
<th>% of Total</th>
<th>No. of Employees</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Accountability</td>
<td>11</td>
<td>3%</td>
<td>16</td>
<td>68.8%</td>
</tr>
<tr>
<td>Chief of Staff</td>
<td>20</td>
<td>5%</td>
<td>32</td>
<td>62.5%</td>
</tr>
<tr>
<td>Operations</td>
<td>107</td>
<td>27%</td>
<td>228</td>
<td>46.9%</td>
</tr>
<tr>
<td>Field Relations</td>
<td>14</td>
<td>4%</td>
<td>21</td>
<td>66.7%</td>
</tr>
<tr>
<td>Curriculum and Assessment</td>
<td>87</td>
<td>22%</td>
<td>155</td>
<td>56.1%</td>
</tr>
<tr>
<td>Teaching Profession</td>
<td>23</td>
<td>6%</td>
<td>62</td>
<td>37.1%</td>
</tr>
<tr>
<td>Students Families and Communities</td>
<td>71</td>
<td>18%</td>
<td>152</td>
<td>46.7%</td>
</tr>
<tr>
<td>School Finance and Federal Programs</td>
<td>33</td>
<td>8%</td>
<td>97</td>
<td>34.0%</td>
</tr>
<tr>
<td>Reform and Urban Education</td>
<td>19</td>
<td>5%</td>
<td>32</td>
<td>59.4%</td>
</tr>
<tr>
<td>Left Blank</td>
<td>5</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>390</td>
<td>100%</td>
<td>795</td>
<td>49.1%</td>
</tr>
</tbody>
</table>

Table 4.1 Survey Response Rate
The seniority of the respondents is well distributed, with 42% of the respondents having 5 or more years of experience at ODE. This seniority ratio is consistent with the perception that the Executive Director of Human Resources who is responsible for personnel records. The seniority segmentation is presented in Table 4.2.

Survey Responses Segmented by Seniority

<table>
<thead>
<tr>
<th>Years with the Ohio Department of Education:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1: (a)</td>
<td>62</td>
<td>16%</td>
</tr>
<tr>
<td>1 - 2: (b)</td>
<td>47</td>
<td>12%</td>
</tr>
<tr>
<td>2 - 5: (c)</td>
<td>117</td>
<td>30%</td>
</tr>
<tr>
<td>5 - 10: (d)</td>
<td>57</td>
<td>15%</td>
</tr>
<tr>
<td>More than 10: (e)</td>
<td>106</td>
<td>27%</td>
</tr>
<tr>
<td>Left Blank:</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>390</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 4.2 Survey Responses Segmented by Seniority

190 of the respondents identified themselves as employees (29% response rate) and 200 respondents identified themselves as supervisors (137% response rate). The surveys allowed self-selection in this category and even though the survey instructions defined a supervisor as someone that had 2 or more full time ODE employees reporting to them, many employees opted for the supervisor’s survey rather than the employee survey. One reason for this result is that many ODE employees consider themselves supervisors even though they have no staff or only
interim (part-time) staff. Another reason could be that they may manage or supervise a program with dedicated project staff that report to other departments or organizations. It is also possible that employees selected the supervisor option to skew the results of the survey. Lastly it is possible that the question was not clear enough to permit all respondents to answer correctly. This anomaly introduces error in the analysis, which is noted in the appropriate sections.

Non-respondent Bias

To assess non-respondent bias, a common approach is to compare the respondent sample with some relevant population characteristics to identify demographic differences between the sample and the population. On the basis of department affiliation and seniority the sample is consistent with the agency population. The alternative method of sampling non-respondents is not a viable method in this case because the confidential nature of the survey makes identifying non-respondents impossible.

Overall Results

The overall results by category are presented in Table 4.3 and are segmented into Employee and Supervisor response groups. Employees had a higher response score than supervisors in each area except strategic planning and reengineering. One reason for this difference offered by management, is that the supervisor ranks of the
organization have been subject to the pressures of uncertainty in the restructuring of the organization. This reorganization which had been in process over the year prior to the survey, amplified the pressure on the supervisory ranks to increase organization performance using the revised “report cards” that the agency was using to demonstrate the value created and delivered by the agency to the constituents of the state. The supervisory rank had also been subject to a wage freeze that had been in place for more than two years, which contributed to the frustration level of the supervisory rank.

Overall Survey Results  (Scale 1 – 5; higher values are better)

<table>
<thead>
<tr>
<th></th>
<th>Employee</th>
<th>Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>3.28</td>
<td>3.08</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>2.33</td>
<td>2.51</td>
</tr>
<tr>
<td>Customer &amp; Market Focus</td>
<td>3.32</td>
<td>3.12</td>
</tr>
<tr>
<td>Measurement, Analysis and Knowledge Management</td>
<td>2.95</td>
<td>2.65</td>
</tr>
<tr>
<td>Human Resource Focus</td>
<td>3.37</td>
<td>2.74</td>
</tr>
<tr>
<td>Process Management</td>
<td>3.11</td>
<td>2.93</td>
</tr>
<tr>
<td>Business Results</td>
<td>3.23</td>
<td>3.02</td>
</tr>
<tr>
<td>Reengineering</td>
<td>2.26</td>
<td>2.67</td>
</tr>
<tr>
<td>Totals</td>
<td>3.01</td>
<td>2.83</td>
</tr>
</tbody>
</table>

Table 4.3 Overall Results

When asked about reengineering in the ODE 27% of the employees and 17% of the supervisors responded that process in their center, section or unit have been reengineered, and 23% and 45% left the question blank. This result indicates that there is not a general awareness of the reengineering process or confusion about what
reengineering is and how it might affect the respondent. This high level of uncertainty is consistent with the low average scores for the reengineering questions and could be explained by the announcement and intention of management to reengineer only when appropriate, meaning that not all employees would be exposed to the reengineering activities of the organization. This response is also consistent with management interviews where managers in areas not directly involved with a process being reengineered had much less awareness of the reengineering process.

Scores were also calculated by department or center for each of the eight areas in the survey to determine if there were any differences that could be identified for the benefit of the entire organization.

Comparison to KPMG 1999 Survey

In each of the surveys (supervisor and non-supervisor) there were a number of questions either based on or similar to questions asked in a survey administered to all ODE personnel in 1999 by the KPMG Consulting group. One objective of asking similar questions is that it permits an assessment of the effect of time on the perceptions held by the employees at the ODE. In the following sections these questions are identified and the results compared to determine if a shift in perception has begun. A conservative approach to using this analysis is taken, and the results are used to indicate a direction of change between surveys and are not interpreted to
identify absolute differences between surveys. One reason for this is that the base data (1999 survey) reports aggregate results of the 406 respondents to the survey and in 2005 this data is segregated into supervisor and non-supervisor (employee) groups. A second reason is that the questions have been modified in 2005 to ground the response scales with absolute endpoints; e.g. the 1999 scale endpoints were strongly agree and strongly disagree and in 2005 typical scale endpoints were never occurs and always occurs. Lastly the practical use of the data is to identify where employee perception has changed over the six years between surveys. With this information management can identify and pursue an appropriate improvement plan based on the strategic objectives of the agency. This information is provided in the discussion of each category which is included in Appendix A.

Summary Results

The categories that have had a demonstrable change since 1999 are the Strategic Planning area and the Human Resources area. In 2005, the Strategic Planning area reported a significant decline in the perception of employees regarding the goals of the organization and how they are communicated throughout the agency. The Human Resources area reported a significant increase in areas related to performance appraisals and team support.
<table>
<thead>
<tr>
<th>Category</th>
<th>Adjusted Kruskal-Wallis Test Statistic</th>
<th>P – Value</th>
<th>Interpretation of Change in perception of all employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>0.13</td>
<td>.718</td>
<td>No change</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>6.82</td>
<td>.009*</td>
<td>Less SP occurring</td>
</tr>
<tr>
<td>Customer and Market Focus</td>
<td>2.84</td>
<td>.092*</td>
<td>No change</td>
</tr>
<tr>
<td>Measurement, Analysis and Knowledge Mgmt.</td>
<td>0.55</td>
<td>0.74</td>
<td>No change</td>
</tr>
<tr>
<td>Human Resource Focus</td>
<td>5.15</td>
<td>0.023*</td>
<td>More HR Focus</td>
</tr>
<tr>
<td>Process Management</td>
<td>0.86a</td>
<td>0.355</td>
<td>No change</td>
</tr>
<tr>
<td>Business Results</td>
<td>0.35</td>
<td>0.556</td>
<td>No change</td>
</tr>
<tr>
<td>Reengineering</td>
<td>0.01</td>
<td>0.917</td>
<td>No change</td>
</tr>
</tbody>
</table>

* Significant

\(^a\) This category has a small sample size reducing the accuracy of the test
Comparison to Baldrige Questionnaire

The Baldrige National Quality Program (BNQP) developed a questionnaire to assess an organization and identify areas where improvements would enhance performance. The questionnaire, published in 2004, has two parts; “Are We Making Progress As Leaders” designed to collect the perceptions and opinions of managers and supervisors in the organization and “Are We Making Progress” the companion piece designed to collect matching information from non-supervisory employees. The questionnaires each have a total of 40 questions, organized into categories as described in the Baldrige Criteria (Leadership, Strategic Planning, Customer and Market Focus, Measurement, Analysis and Knowledge Management, Human Resource Focus, Process Management, and Business Results). In 2005 the BNQP published a benchmark response to each survey compiled by Baldrige examiners that was based on sixty (60) responses to the “Leaders” survey and two hundred and twenty eight (228) responses to the employee survey. Questions in each of the surveys administered to ODE employees were based on questions in these surveys. The questions have been modified in the ODE survey to ground the response scales with absolute endpoints; e.g. the 1999 BNQP scale endpoints were strongly agree and strongly disagree and in 2005 typical scale endpoints were never occurs and always occurs. They are reported in Appendix C organized by Baldrige Criteria.
Conclusions

Of the 38 questions based on the BNQP Employee Survey, 33 scores were below the benchmark score and 1 scored above the benchmark. For the 39 questions based on the Leader’s Survey 34 scores were below the benchmark scores and 1 was above. Combining questions in each section to assess the impact of category averages yields the results listed in Table 4. 5, which confirms that the ODE scores below the benchmark in each category, and identifies three sections where there is not a significant difference between the benchmark scores and the ODE scores. (Customer and Market Focus – Leader; Measurement, Analysis and Knowledge Management – Employee; and Business Results – Employee) These differences can be attributed to 1) aggregating difference scores that were close to being insignificant in a category and 2) the aggregate effect of having the questions where the ODE outscored the benchmark included in the total. Practically these results should not cause the ODE to ignore these areas when improving the organization, but allow the ODE to focus on the areas that will provide a better return for the resources invested.

One objective of the Baldrige Questionnaire is to help identify areas where improvement could make a significant difference in organization performance. In the ODE case the question evolves into what areas should get the attention of management to achieve the optimal amount of performance improvement. The Baldrige Criteria recognizes that different areas within the organization have different
impacts on performance, which is reflected in the scoring system for the Malcolm Baldrige National Quality Award.

Summary of Survey Differences with Baldrige Benchmark by Criteria Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Adjusted Kruskal-Wallis Test Statistic (adjusted for ties)</th>
<th>P – Value</th>
<th>Interpretation Difference from Benchmark Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>9.42</td>
<td>.002*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td>Leader</td>
<td>8.31</td>
<td>.004*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td><strong>Strategic Planning:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>3.86*</td>
<td>.050*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td>Leader</td>
<td>3.86*</td>
<td>.050*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td><strong>Customer and Market Focus:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>3.15</td>
<td>.076*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td>Leader</td>
<td>0.88</td>
<td>.347</td>
<td>No Difference</td>
</tr>
<tr>
<td><strong>Measurement, Analysis and Knowledge Mgmt.:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>2.08*</td>
<td>.149</td>
<td>No Difference</td>
</tr>
<tr>
<td>Leader</td>
<td>7.88</td>
<td>.005*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td><strong>Human Resource Focus:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>4.33</td>
<td>.037*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td>Leader</td>
<td>5.03</td>
<td>.025*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td><strong>Process Management:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>4.08*</td>
<td>.043*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td>Leader</td>
<td>4.08*</td>
<td>.043*</td>
<td>Benchmark is higher</td>
</tr>
<tr>
<td><strong>Business Results:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>2.53</td>
<td>.112</td>
<td>No Difference</td>
</tr>
<tr>
<td>Leader</td>
<td>4.31</td>
<td>.038*</td>
<td>Benchmark is higher</td>
</tr>
</tbody>
</table>

* Significant

a This category has a small sample size reducing the accuracy of the test

Table 4.5 Summary of Survey Differences with Baldrige Benchmark by Criteria Category
Using the Baldrige Quality Award Scoring Criteria as a guide to identify areas where improvement could make a significant difference; the areas in order of importance (ranked by score potential) are: Organizational Performance Results (450), Leadership (120), Measurement, Analysis and Knowledge Management (90), with the remaining sections having 85 points each. Using this prescription to direct management focus Business results, Leadership and Measurement, Analysis and Knowledge Management areas have the highest priority to change. It is good to note that in two of these areas (Customer and Market Focus; Measurement, Analysis and Knowledge Management) one group (employee or supervisor) has attained benchmark level scoring and activities in these areas must be maintained and encouraged to achieve the improvement in results that the Baldrige Model predicts.

In the organizational results (Business Results in the ODE survey) section the most significant change in this area at the ODE has been the introduction and roll out of the logic model, which has taken more than one year to be implemented in the organization. Even though implementation is now complete, the process of reviewing performance measures and fine-tuning them to insure they are consistent with the objectives of each department is still in process. It will take a number of iterations for the employees to develop confidence in the measures and to understand how the measures will be used to judge department and individual performance. The employee questions that scored lower than the benchmark are related to communication either within the organization or with external stakeholders, and the
performance measures identified in the logic model can be used to frame communications to consistently provide feedback to individuals in the department and other stakeholders demonstrating the focus of the organization on the objectives of the ODE.

The leadership portion of the survey result is the second highest weighted criteria (by MBNQA) and the ODE scored below the benchmark in both leadership (supervisor) and employee segments. One theme in the questions in this category is communication and the effectiveness of communication between supervisory and non-supervisory employees. The benchmark scores are equal for supervisor/non-supervisor categories and in the ODE the supervisor score is lower than the employee. This result is interesting because it implies that the employee understands more about what they are told by management than management believes they understand. The content of communication and insuring understanding is important, and based on the responses on the questions related to sharing information and encouraging learning; frequency of communication is also a concern. Framing communications in a consistent way will enhance understanding. Making sure the frequency of communication improves, especially to provide more feedback will improve the scores in this section of the survey.

The measurement, analysis and knowledge management section of the survey is theoretically linked to the logic model discussed in the business results section above.
The logic model is a process to develop and use performance measures that are consistent with the organization’s objectives and provide clear ties from all levels of the organization to organizational goals. The logic model includes not only the development of appropriate performance measures but also incorporates communicating the measures to the appropriate stakeholders in the process. By including teams of process participants in the development of each department’s logic model and of the performance measures used, a measurement system has been created that individuals can use to guide their activities. Participants will gain confidence, knowing how their actions affect individual, group and department performance as they continue to use the model.

Structural Analysis
A second test of the ODE response was undertaken to see if the structure of the ODE survey response would be similar to the Malcolm Baldrige Model. The rational for this test is that as the MBNQA philosophy is adopted by the organization the perception of the employees should evolve to a structure similar to the MBNQA Framework. This is operationalized by performing a factor analysis on the data to determine if factors can be extracted to match the components of the Baldrige Criteria. If the relationships between the survey responses are similar to the criteria, then an argument can be developed that the philosophy of the Baldrige has been adopted by the employees of the organization, but has not yet reached a stage where benefits are evident. To restate this idea the following hypothesis is tested.
Hypothesis: If the ODE has incorporated the philosophy of the Baldrige criteria, the survey responses will factor into categories similar to the Baldrige model.

To test this hypothesis, a factor analysis was conducted extracting seven factors from the survey question data to identify any similarities to the Malcolm Baldrige Benchmark Responses. The resulting factor loading was not consistent with the Baldrige model, and is presented in Table 4.6. This table was developed using a principle components data reduction method on the supervisor’s responses, with the resulting loading rotated using an orthogonal technique to determine maximum differentiation between the components. A structure similar to the Baldrige structure would have seven factors, consistent with the seven categories of the Baldrige questionnaire and the questions from each category should correlate to one another. In this case the questions have one major component which can be called leadership. This is a convenience title as the first questions are primarily about leadership. The components that come closest to modeling the Baldrige components are the customer and market focus component (component #4, question category 2400) and the measurement analysis and knowledge management component (component #2, question series 2500) with weaker components corresponding to the business results component (component #5, questions 2800) and the process management component (component #3 and 1, question series 2700) These similarities are not significant enough to imply that the structures are similar at this point in time.
<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>e_2009</td>
<td>.813</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e_2007</td>
<td>.773</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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Extraction Method: Principal Component Analysis.
Rotation Method: Quartimax with Kaiser Normalization.
a Rotation converged in 11 iterations.

Table 4.6 Rotated Component Matrix (a)
Case Study Comparison

The four case studies conducted, The Logic Model, Reengineering in Operations A, B and Leadership all depict activities that are consistent with good quality management practices. The logic model is a technique to communicate the goals and objectives of the organization to every level of the organization to achieve support for the vision and give guidance to all employees to insure the decisions they make will be consistent with the objectives of the entire organization. The model fosters bottom up communication by requiring that teams from each department refine and deploy the logic model in their own areas, creating the strategies that will move the organization to achieve its goals. In this process they create detailed performance measures that indicate the status of activities that need to occur in order to realize the larger organizational goals. It has been used to create the performance measurement dashboard that is understood by a large portion of the employees. The goal setting and performance measurement development process has sensitized employees to what tasks and products are critical to organizational performance and recommitted many to achieving the goal of improving the achievement of all students by putting in writing how their work contributes to the objective. There was concern over the length of time the process of creating the department logic models took, but there was an intent to develop as many of the models internally as possible; which prolonged the process but required more involvement by the individuals that have to live with the result.
The logic model is also a tool that can be used to communicate to external stakeholders also. It clearly depicts what the organization has identified as the causes of higher achievement for all students in a form that can be easily understood. The communication of goals, objectives and expectations is a recurring theme in all of the cases developed at the organization.

These results are similar to the reorganization in Operations A and B where the projects selected for reengineering were chosen in part because of their impact on outcomes that had to be controlled in the logic model. What is different about the application in Operations is that the case focuses on the changes that had to be made to the status quo to optimize the work to be done. The resulting processes are very valuable outcomes just by educating employees how other employees depend on their output. Even administrative tasks like travel voucher processing and hiring new workers have benefitted by having employees who work with these processes on a daily basis understand why the detail associated with doing the task are important.

The last case which examines leadership relies on communication to effectively navigate the organization to a plane of more efficient operations. What sets this case apart from the other cases is the role the performance measurement system is given to create and manage expectations of the activities of management, which are used effectively to steer the organization to higher (measured internally or externally) performance. In the Malcolm Baldrige Award Criteria the results component is given
45% of the weight in the award application indicating that an organization that does not emphasize the results of their activities, in their performance measurement system, cannot be a high quality organization. The ODE has recognized this and uses the collection and analysis of data as a core component of their mission, attempting to base all of their key decisions on an analysis of the appropriate information and the results that a given action is likely to cause. It is interesting to note that even with an increased emphasis on performance measures the employees still rate leadership below the benchmark scores of the Baldrige survey.

To characterize the combined results from these four cases is straight forward in that the ODE is practicing effective quality management as defined by Total Quality Management Theory, Balanced Scorecard Theory, and Reengineering. Are there other cases within the organization that do not demonstrate these characteristics? Most likely, but during this period of organizational evolution management is attempting to significantly change the status quo and use the new paradigm of fact based decision making, efficient operations, and individual responsibility to make the organization more efficient and effective. Although the organization at this time does not show a pattern of employee perceptions similar to the Malcolm Baldrige Framework, the accomplishments of the organization are significant and the ODE has positioned itself to leverage its accomplishments to even better performance.
CHAPTER 5
CONCLUSIONS AND FUTURE STUDY

Conclusions

The survey data in this research is clear; there is no structure similar to the Malcolm Baldrige structure that is evident in the perception of employees of the Ohio Department of Education. This conclusion is based on analysis of the responses in the supervisor and general employee strata and is valid at the organization level as well. It is also clear that the organization was embracing elements of total quality management from both a top management down perspective and an employee up perspective at the time of the survey.

The evidence of the top management down approach to quality improvement is centered on the implementation of the “Logic Model”, with all departments developing objectives and performance measures that support the overall agency’s objective of improved academic performance of all students in the system. The evidence of the employee up emphasis on improving organization quality is exemplified in the reengineering efforts undertaken in many departments, the accounting department and the human resources department to cite two. The accounting department case study describing the travel reimbursement process and
the human resource on-boarding process are examples of how attention to managing small support processes enhanced the ability of the organization to more effectively utilize agency resources in pursuit of its primary objective. The discussions held with other employees throughout the organization reinforced the commitment of the employees of the agency to the organization goals and objectives in both subtle and overt ways. Subtle clues included the prominent display of the agency’s mission statement in an employees’ office, and when asked about their involvement in the process of improving the agency’s performance, they were engaged or anticipating an active role in customizing their areas contribution to the logic model and its deployment in their functional area.

These perceptions match a textbook definition of total quality management in that the commitment is throughout the organization, is focused on specific goals, includes training on how improvements can be identified and implemented in the organization, and incorporates ways in which progress can be measured and communicated throughout the organization.

The comparison of employee perception between 1999 and 2004 indicates very little change in employee attitude in the eight categories of survey questions (leadership; strategic planning; customer and market focus; measurement, analysis and knowledge management, human resources; process management; business results; and reengineering) with a decline in strategic planning and an increase in human
resources. Generally this could be interpreted as an organization that has been stagnate in these issues, but I believe this result is mediated by the significant changes occurring in the ODE management environment. (Significant numbers of management reassignments resulting in uncertainty in job descriptions and responsibilities, reporting relationships and work assignments.) Because of the volatility of the environment this result deserves future study. At the time the survey data was collected, the agency was four months into adjusting to an organization wide reorganization that had yet to be fully digested by the employees. One way to address this concern is to resurvey the employees and see how time has changed the responses.

Another possibility is that the Baldrige Model may not be the best model to use to optimize the performance of this organization. The rationale for this position is the importance the Baldrige Model places on organization results. And the results of the ODE are generally defined by the performance of students who have no direct relationship or contact with the ODE. This latent relationship between the ODE and its principal performance measure make the organizations application of the Baldrige Model unique, compared to all the other documented applications of the model to date. Even the administrators of the Baldrige Agency expressed some confusion as to how this type of organization fits the models typically used in assessing quality performance.
Resolution of this issue appears to be in the deployment of the logic model within the agency. By implementing the logic model, performance measures are being established that will allow the agency to measure the progress/performance of the agency in a similar fashion as a service organization would measure performance. Customers are identified throughout the value chain of the education process and performance is monitored on the variables that are directly influenced by the actions of the agency rather than by the single performance measure of student achievement. The effectiveness of this resolution merits additional study, but since the adoption of the logic model the agency has improved their performance by both the internal performance indicators developed as part of the logic model deployment and by using the latent variable, student performance. In fact the state placed 10th in the nation for student achievement in grades k-12 and over the past eight years has established solid upward trends in student performance on achievement tests.

The determination of how much of this performance improvement is due to organization changes like the deployment of the logic model or the reorganization of the agency is beyond the scope of this study and are interesting questions to pursue.

Compared to the Baldrige Benchmark, the Ohio Department of Education scored below the benchmark in almost every category. The scores can be used to prioritize management attention to the areas that will have the most impact on the organization’s performance as per the Baldrige Model (e.g. focusing on results and
leadership). This result was unexpected because of the emphasis that the organization had placed on complying with the Baldrige Quality Model and the communication that had taken place with all the employees to establish the Baldrige Model as a desired state of operations.

The survey responses are not consistent with the interview comments obtained from the structured interviews held to build the case studies or the meetings witnessed by the researcher. There are many anecdotal observations of various total quality management practices being utilized and the implementation of these practices is captured to some degree in the scorecard the ODE has used to monitor the performance of the organization in a number of key areas.

For example the deployment of the “Logic Model” by the agency captures key performance measures in each department; ties these measures to department and agency wide goals and is regularly updated and communicated to employees.

The access to agency information by all employees has gone through a major metamorphous incorporating web based newsletters, e-Mail announcements and the use of project management software. These practices facilitate more efficient and effective communication among employees and more efficient and effective meetings.
The targeted use of “reengineering” is effectively improving the performance of sub systems and “back office” activities by eliminating unnecessary activities and allowing employees to spend more time on other tasks.

These examples have not been captured in the survey data but are classic applications of the processes the Baldrige criterion is designed to identify. The question that this analysis leads to is why these results differ from the Baldrige benchmarks and the theoretical expectations that were developed.

Management has noted that at the time of the survey the environment was particularly charged by the following factors:

The ODE had recently been reorganized with the operations support areas gaining more responsibility and head count within the organization structure. This reorganization required the physical relocation of a large number of employees (within the same complex of buildings) as well as changes in reporting relationships. This new structure had been in place for only four months at the time of the survey and is a source of discomfort and concern for many long term employees who have a new supervisor. This reorganization has also generated uncertainty among the managers/supervisors who previously had headcount responsibility for support functions within their center (division or department) and have lost control of this direct reporting relationship within the new organization. The capability of this
structure had not been tested and there is the learning curve that the organization had just begun to travel as the managers experienced the advantages and solved any new problems that surfaced as a result of the new organization.

Among the general employees there is a subgroup of employees that are union members and others that are non-union (as of 2004), who are oftentimes performing very similar if not identical tasks. This is significant because in 2002 and 2003 the state government had instituted a wage freeze preventing the unrepresented employees from receiving cost of living or other salary increases. In some cases coworkers having similar responsibilities earned different salaries only because of their union affiliation. This circumstance was demoralizing to the unaffiliated employee and generally divided the loyalties of the lower salary grade employees.

One method that management used to reward employees and still adhere to the wage freeze constraint was to expand the responsibilities of those exceptional employees, willing to accept them. With new responsibilities, the job description could be revised and the position re-graded to promote the employee to the new grade classification. This was a lengthy process and required the approval of multiple layers of management.

These factors are all potential influences on the perceptions of ODE employees.
Another concern is the benchmark published by the Malcolm Baldrige National Quality Award organization. This benchmark was created using a relatively small sample of Baldrige award examiners providing a theoretical benchmark as opposed to a benchmark based on award winners’ responses. These responses would (are meant to) be generic and do not include nuances that would be specific to a class of business recognized as being different by the Baldrige process itself. Meaning the different categories of the Baldrige Award, manufacturers, service firms, healthcare and education are expected to have the same benchmark responses for the survey questions. This benchmark may provide an initial reference but needs to be further refined in the future.

The objective of the Baldrige Award is to create awareness of systems that can be used to enhance and expand the quality of the product or service of a firm. A principle benefit of the program is the analysis of the organization’s processes that is conducted as part of the application process. This analysis is designed to identify areas where process improvements would benefit the organization’s customers and help create or enhance the competitive advantages enjoyed by the organization. The ODE has benefited from the efforts undertaken to adopt the Baldrige principles and these benefits will be more visible as time passes and the principles become more integrated into the actions of all the employees of the agency. The time it takes to reap the benefits of a philosophical adoption of a quality system is also a factor in this analysis. When Japanese industry first began their quality emphasis it took more than
a decade to achieve positions as industry leaders and the ODE has only been focusing on the Baldrige philosophy for three years (at the time of this study).

As a significant amount of time has passed since this survey was conducted the external measures of performance have continued to improve suggesting that the actions taken by the ODE have had a positive effect on performance. External causes of performance change have not been included in this study by design and to better understand the complete effect of the changes made at the ODE a study of the external environment (external to the ODE) affecting student performance would be necessary to supplement this study. As described in the introduction (Chapter 1) there are many other factors influencing student performance in addition to the actions of the ODE. (Examples include local school board budgets, classroom teacher effectiveness, student home environment factors, student nutrition factors, school violence factors etc.) While the ODE has taken specific actions to isolate the variables it can influence, these variables have not all been independently validated and in most cases will evolve through trial and error (as prescribed by the continuous improvement process) to variables that do provide significant impact on student performance.

The identification of other factors influencing student performance and determining any interaction effects would be a valuable contribution to understanding the process of delivering education.
These many diverse issues involved in optimizing an education system are all very complex and exist in a constantly changing environment which makes the dissection of the problem difficult and challenging. The application of business principles to education problems has not always been well received by the education community, nor have the methods always been applied appropriately by the business community; but there is no doubt that the union of these two perspectives of management can yield better results than those solutions that are developed without the consideration of a broader potential solution set.

Recommendations for the ODE

Based on the analysis reported in chapter four and the considerations noted in this chapter, recommendations were developed for the ODE to increase the performance of the ODE and enhance the gains realized to date. These recommendations are presented in the categories used in the Baldrige Quality Award and in the order in which they appear in the survey.

Leadership/Strategic Planning

A consistent set of survey questions should be regularly used to insure accurate trends in employee perception over time. Existing efforts to improve leadership within the agency should continue. (Communication about goals, objectives and progress)

Customer and Market Focus
The surveys of 1999 and 2005 do not identify a significant change in employee perspective although five of the seven questions had lower scores. The questions showing declines are in areas that are addressed by the Logic Model and with the communication that is taking place with the implementation of the logic model these scores should improve if the survey is re-administered.

Measurement Analysis and Knowledge Management

The results of this section from the survey are consistent with the previous sections, and while not significantly different from 1999, the scores of a majority of the items decreased. The common factor among these survey items is communication which supports the recommendation to continue and enhance communication within the organization.

Human Resource Management

This category of scores improved between 1999 and 2005 based on the perception that employees are held accountable for their efforts and are evaluated and recognized for their efforts more than they had been; this emphasis should continue.

Summarizing these recommendations, adequate communication is the key area to improve the perception of employees and supervisors and to motivate them to pursue the organizations objectives. Communication of goals, expectations and performance on an individual, department and organization wide basis needs to be consistent, regular part of the culture at the ODE.
This research documents some of the value realized by applying business methodology in an education service organization. It also identifies some of the potential value within reach of those educational organizations who are willing to incorporate the methodology to increase the efficiency of their organization. It is the hope of this researcher that this knowledge can be put to use and exploited by other similar organizations.
REFERENCES


APPENDICES
APPENDIX A: 2005 SURVEY COMPARED TO 1999 SURVEY

The analysis that follows is arranged in the order that the questions appeared in the 2005 survey, with a comment on employee response, and then a corresponding table of results followed by a supervisor comment area, table of results, and in conclusion the combined comments and results. A change in the response to a question is determined by comparing the 95% confidence interval of the 2005 response to the average response obtained in 1999; if the interval contains the average value reported in 1999, the conclusion is that no change is perceived on the question between the two survey periods. In the following tables the questions used in the 2005 survey are listed and the questions from the 1999 KPMG Management Audit are referenced in brackets. The 1999 KPMG Management Audit Survey Questions are listed in Appendix B.
Leadership

Employee

Three questions in this section are based on questions in the 1999 survey, with the third question being more specific than the 1999 question emphasizing the caution that a direct comparison should not be made. The first two questions are about the respondent’s awareness of the mission and goals of the ODE and the department (center) where they work and are lower than in 1999. The third question ranks the commitment to achieving the department (center) goals and is higher than in 1999. These responses imply that additional communication about ODE mission and department goals would be useful. Commitment to achieving the goal is good but this proposition requires further study. The questions in this section are presented in Table A.1

<table>
<thead>
<tr>
<th>Question</th>
<th>Change from 1999</th>
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<tbody>
<tr>
<td>I know ____ of the ODE’s mission (what it is trying to accomplish). [Based on question 1]</td>
<td>Decrease</td>
</tr>
<tr>
<td>I know ____ of my center’s (or office's) goals (what it is trying to accomplish). [Based on question 5]</td>
<td>Decrease</td>
</tr>
<tr>
<td>I am committed to achieving ____ of my department’s (center’s) goals. [Similar to question 5]</td>
<td>Increase</td>
</tr>
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Table A.1 Leadership: Employee
Supervisor

Two questions in this section are based on the 1999 Survey and ask about commitment to the ODE mission and awareness of the department (center) mission. The commitment to the mission is unchanged and awareness is less than the 1999 result. This response is consistent with the finding in the employee response. Six other questions are similar to the base survey, regarding awareness of the agency mission, sharing information, communicating priorities, accessibility to customers and use of performance feedback. The results indicate a decline in awareness of the agency’s mission among supervisory employees and a decline in senior manager’s accessibility to customers since 1999. There is no change in the amount of information shared, communication of priorities and the use of performance feedback to improve process from the 1999 survey. There is improvement in management encouraging training. The results for these questions are presented in Table A.2.
Leadership: Supervisor

<table>
<thead>
<tr>
<th>Question</th>
<th>Change from 1999</th>
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<tr>
<td>The extent to which there is organization wide commitment to the mission of the ODE. [Based on question 2]</td>
<td>NC</td>
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<tr>
<td>The number of our employees that know our center’s or unit's mission (what we are trying to accomplish). [Based on question 5]</td>
<td>Decrease</td>
</tr>
<tr>
<td>The number of our employees that know the Ohio Department of Education (ODE) agency’s mission (what we are trying to accomplish). [Similar to question 1]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Our leadership team _____ shares information about the organization. [Similar to questions 58, 59, 60]</td>
<td>NC</td>
</tr>
<tr>
<td>Our leadership team _____ encourages learning that will help all our employees advance in their careers. [Similar to questions 48, 50]</td>
<td>Increase</td>
</tr>
<tr>
<td>Our leadership team _____ lets our employees know what is most important. [Similar to question 64]</td>
<td>NC</td>
</tr>
<tr>
<td>Senior managers are _____ accessible to customers. [Similar to question 82]</td>
<td>Decrease</td>
</tr>
<tr>
<td>We _____ use performance feedback to improve the quality of our processes (products). [Similar to question 85]</td>
<td>NC</td>
</tr>
</tbody>
</table>

Table A.2 Leadership: Supervisor
Combined Leadership Results

The 1999 survey did not segment the responses by supervisory status. Aggregating the current survey results and comparing them to the 1999 survey results, there is no change in employee’s perception of leadership using the three questions that are closely worded or the eleven questions that are similar. An argument could be made that if there is no distinction in the aggregate, that the detail analysis is not recommended and that any differences identified could be random occurrences not caused by a difference recognized in the data. (Hayes 1994, Hair, Anderson, Tatum and Black 1998) The counter to this argument is that because the questions and response scales are not identical the ability of parametric statistical procedures to provide reliable inferences is weak. When the aggregate data is tested using a non-parametric Kruskal-Wallis test to identify a difference in mean values between the 1999 and 2005 data, the analysis, again, does not show a significant change from one survey to the other. The implication is that: 1) a consistent survey should be given over a period of time to insure comparability from one period to the next. 2) Efforts to improve the leadership within the agency need to continue or expand to register a change that can be statistically supported.

Combined Leadership Change in Perception between 1999 and 2005: No Change
Strategic Planning

Employee

There were no questions that are based on 1999 survey questions in this part of the survey, and one question that is similar to two 1999 questions. This result implies that more communication about department (center) plans would help improve the operation of the ODE. Table A.3 shows the question used for this analysis.

<table>
<thead>
<tr>
<th>Strategic Planning: Employee</th>
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<tr>
<td>I know the ____ of the parts of my organization’s plans that will affect me and my work. [Based on questions 4, 6]</td>
<td>Decrease</td>
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</tbody>
</table>

Table A.3 Strategic Planning: Employee

Supervisor

None of the questions in this section were based on the 1999 survey questions and six questions regarding referencing the strategic plan, employee knowledge of the plan and measuring progress against the plan were similar to questions asked. These results imply that more communication about the strategy of the organization, how it applies to an individual and how progress would be measured would benefit the ODE. The questions used and the results for this analysis are in Table A.4
Strategic Planning: Supervisor

<table>
<thead>
<tr>
<th>I refer to the ODE Strategic Plan  [Similar to questions 1, 5, 8]</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>The extent to which our employees know the parts of our organization’s plans that will affect them and their work. [Similar to questions 1, 5]</td>
<td>Decrease</td>
</tr>
<tr>
<td>The number or our employees that know how to tell if they are making progress on their work group’s part of the plan. [Similar to question 6]</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.4 Strategic Planning: Supervisor

Combined Strategic Planning Results

The result of the decrease is a significant difference between the two surveys results with the 2005 survey having lower values. There is an opportunity for the ODE to recover the awareness that it had in 1999 in describing to the employees the mission and goals of the organization in the context of how the plan will impact each specific department.

The roll-out (implementation) of the agency’s logic model to each department should change these measures to a positive value. The logic model is a detailed performance measurement tool that links the agency’s goals and performance to key strategies and indicators in every department. At the time of the survey, a number of departments had not developed their logic model, and were scheduled to do so later this year.
Customer & Market Focus

Employee

Two questions in this category are similar to questions in the 1999 survey, relating to customer knowledge and customer satisfaction. The results indicate a decline in knowing who the most important customers are since the 1999 survey. These questions are listed in Table A.5

<table>
<thead>
<tr>
<th></th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agency _____ takes action to meet the changing needs of our customers quickly. [Based on question 10]</td>
<td>NC</td>
</tr>
<tr>
<td>The agency _____ takes action to meet the changing needs of our customers effectively. [Based on question 10]</td>
<td>NC</td>
</tr>
<tr>
<td>I know who _____ of my most important customers are. [Similar to questions 83]</td>
<td>Decrease</td>
</tr>
<tr>
<td>I ask _____ of my customers if they are satisfied or dissatisfied with my work. [Similar to question 85]</td>
<td>NC</td>
</tr>
<tr>
<td>I _____ have the authority to make decisions to solve problems for my customers.</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.5 Customer and Market Focus: Employee
Supervisor

Two questions are based on questions in the 1999 survey, about the speed and effectiveness that the agency takes to respond to the needs of customers, neither are significantly different from the 2005 survey. Five of the questions are similar to questions in the 1999 survey and all five of the 2005 responses are lower than the 1999 responses. These questions are listed in Table A.6.

Customer and Market Focus: Supervisor

<table>
<thead>
<tr>
<th></th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agency quickly takes action to meet the changing needs of our customers. [Based on question 10]</td>
<td>NC</td>
</tr>
<tr>
<td>The agency effectively takes action to meet the changing needs of our customers. [Based on question 10]</td>
<td>NC</td>
</tr>
<tr>
<td>The number of our employees that know who their most important customers are. [Similar to question 83]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Customer complaints are a performance measure used in _____ of the performance reviews that I give. [Similar to questions 85]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Our employees correspond (talk, email or written) with their customers. [Similar to questions 84]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Our employees ask if their customers are satisfied or dissatisfied with their work. [Similar to question 85]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Our employees have the authority to make decisions to solve problems for their customers. [Similar to question 18]</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.6 Customer and Market Focus: Supervisor
Combined Customer and Market Focus Results

The Kruskal-Wallis test does not find a difference between the 1999 and 2005 survey result in this category, inferring that the declines in response to similar questions is not due to a significant difference in the perceptions of employees in 1999 and 2005.

Measurement, Analysis and Knowledge Management

Employee

Five questions about the clarity, comprehensiveness and effectiveness of communications in the 2005 survey were based on 1999 survey questions; one question on performance measurement was based on the 1999 survey.

Five of the nine employee responses declined from the 1999 survey. The questions indicating a decline from 1999 relate to the quality of communications within the organization and performance measures used for individual assessment. Given the organizational transition in process during the survey period, these results are understandable and emphasize the need of management to insure that communication occurs clearly to all employees regarding performance. The questions used in this part of the analysis appear in Table A.7.
<table>
<thead>
<tr>
<th>The agency (ODE) _____ does a good job of measuring and evaluating the effectiveness of individual programs. [Based on question 24]</th>
<th>NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall quality of communications throughout the agency is _____ clear. [Based on question 69]</td>
<td>NC</td>
</tr>
<tr>
<td>The overall quality of communications throughout the agency is _____ comprehensive. [Based on question 69]</td>
<td>NC</td>
</tr>
<tr>
<td>The overall quality of communications throughout my center (office) is _____ clear. [Based on question 68]</td>
<td>Decrease</td>
</tr>
<tr>
<td>The overall quality of communications throughout my center (office) is _____ comprehensive. [Based on question 68]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Management _____ effectively communicates the impact and necessity of change before embarking upon new initiatives. [Based on question 20]</td>
<td>NC</td>
</tr>
<tr>
<td>I _____ know how to measure the quality of my work.. [Similar to questions 25, 29]</td>
<td>Decrease</td>
</tr>
<tr>
<td>I _____ analyze (review) the quality of my work to see if changes are needed. [Similar to question 27]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Performance measures are _____ communicated to me. [Similar to questions 25, 33]</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.7 Measurement, Analysis and Knowledge Management: Employee
Measurement Analysis and Knowledge Management: Supervisor

Three measures imply a change from the 1999 survey results; one that improved and two that declined. The use of benchmarks was perceived as better in 2005 than in 1999. Communication quality within departments and the number of employees who understand how individual performance measures mate to department (center) performance declined from the 1999 survey result. These questions are presented in Table A.8

<table>
<thead>
<tr>
<th>Measurement, Analysis and Knowledge Management: Supervisor</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agency (ODE) _____ does a good job of measuring and evaluating the effectiveness of individual programs. [Based on question 24]</td>
<td>NC</td>
</tr>
<tr>
<td>The overall quality of communications throughout the agency is adequate. [Based on question 69]</td>
<td>NC</td>
</tr>
<tr>
<td>The overall quality of communications throughout my center (office) is adequate. [Based on question 68]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Management effectively communicates the impact and necessity of change before embarking upon new initiatives. [Based on question 20]</td>
<td>NC</td>
</tr>
<tr>
<td>The agency gathers best practices from other states. [Based on question 74]</td>
<td>Increase</td>
</tr>
<tr>
<td>Performance measures are reviewed at regular intervals for each program. [Similar to questions 32, 33]</td>
<td>NC</td>
</tr>
<tr>
<td>The number of our employees who know how the measures they use in their work fit into our office’s overall measures of improvement. [Similar to questions 4, 6]</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.8 Measurement, Analysis and Knowledge Management: Supervisor
Combined Measurement, Analysis and Knowledge Management

The combined measures do not identify a difference between the 1999 and 2005 surveys.

Human Resource Focus

Employee

Three questions were based on the 1999 survey and two responses implied positive changes in the time that has passed; the frequency of performance appraisals and the use of performance plans in the appraisal. Two responses to the three questions that were similar to those asked in 1999 showed improvement, working as part of a team and being recognized for outstanding work. The only question that implied a decline in this category was the perception of having the authority to change a process. The questions and survey results are depicted in Table A.9.
Human Resource Focus: Employee

<table>
<thead>
<tr>
<th>Statement</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>I _____ receive a formal performance appraisal at least once per year.</td>
<td>Increase</td>
</tr>
<tr>
<td>[Based on question 30]</td>
<td></td>
</tr>
<tr>
<td>My performance is _____ measured based on my performance goals or plan.</td>
<td>Increase</td>
</tr>
<tr>
<td>[Based on question 33]</td>
<td></td>
</tr>
<tr>
<td>Non-performing employees are _____ counseled on how to improve and given</td>
<td>NC</td>
</tr>
<tr>
<td>a timeframe to demonstrate improvement. [Based on question 43, Similar</td>
<td></td>
</tr>
<tr>
<td>to question 42]</td>
<td></td>
</tr>
<tr>
<td>I _____ have the authority to make changes that will improve my work.</td>
<td>Decrease</td>
</tr>
<tr>
<td>[Similar to question 18]</td>
<td></td>
</tr>
<tr>
<td>The people I work with _____ cooperate and work as a team.</td>
<td>Increase</td>
</tr>
<tr>
<td>[Similar to question 22]</td>
<td></td>
</tr>
<tr>
<td>I am _____ recognized for outstanding work. [Similar to question 44]</td>
<td>Increase</td>
</tr>
</tbody>
</table>

Table A.9 Human Resource Focus: Employee

Human Resource Focus Supervisor

Of the seven questions based on 1999 survey questions, four implied improvement from the 1999 results and the others were unchanged. The frequency and quality of performance appraisals is perceived as having improved by the supervisory employees. Of the three questions that were similar to 1999 questions, the result for teamwork and employee recognition have improved and the only result to imply a
decline in this area is a supervisors perception that an employee does not have the authority to improve work processes. These questions are listed in Table A.10.
<table>
<thead>
<tr>
<th>Item</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-performing employees are given a timeframe to demonstrate improvement. [Based on question 43]</td>
<td>Increase</td>
</tr>
<tr>
<td>Non-performing employees are counseled on how to improve. [Based on question 43]</td>
<td>Increase</td>
</tr>
<tr>
<td>The criteria for determining training needs are clear and fair for each employee. [Based on question 52]</td>
<td>NC</td>
</tr>
<tr>
<td>The agency does a good job rewarding the best and brightest employees. [Based on question 40]</td>
<td>NC</td>
</tr>
<tr>
<td>The agency takes time to celebrate individual and collective achievements. [Based on question 41]</td>
<td>NC</td>
</tr>
<tr>
<td>I receive a formal performance appraisal at least once per year. [Based on question 30]</td>
<td>Increase</td>
</tr>
<tr>
<td>My performance is evaluated against my performance goals or plan. Based on question 33]</td>
<td>Increase</td>
</tr>
<tr>
<td>Our employees make changes that will improve their work. [Similar to question 18]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Our employees work as a team. [Similar to question 22]</td>
<td>Increase</td>
</tr>
<tr>
<td>Our employees are recognized for outstanding work. [Similar to questions 37, 40, 43]</td>
<td>Increase</td>
</tr>
</tbody>
</table>

Table A.10 Human Resource Focus: Supervisor
Combined Human Resource Management

The data suggest that there has been an increased emphasis on HR issues since the employee survey of 1999. Positive changes have occurred and the environment to continue this trend should be maintained.

Process Management

Employee

The one question in this category is similar to two questions in the 1999 survey and the responses do not imply a change has occurred in employee perception.

<table>
<thead>
<tr>
<th>Process Management: Employee</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>I _____ can get all the information and resources I need to do my job. [Similar to questions 88, 92]</td>
<td>NC</td>
</tr>
</tbody>
</table>

Table A.11 Process Management: Employee

Supervisor

In this segment, the question is again similar to two questions from 1999. The responses indicate a decrease in the amount of control employees feel they have over their personal work process.
Our employees have control over their personal work processes [Similar to questions 18, 27]  

<table>
<thead>
<tr>
<th>Process Management: Supervisor</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease</td>
<td></td>
</tr>
</tbody>
</table>

Table A.12 Process Management: Supervisor

Combined Process Management

Because the sample in this category totals only six observations, the accuracy of the Kruskal-Wallis test is reduced substantially. The suggested minimum sample size is 5 observations per treatment. With this warning there is insufficient evidence to imply that there is a difference between the 1999 and the 2005 survey results.

Business Results

Employee

Four questions were similar to questions asked in 1999, dealing with customer satisfaction, employee efficiency and job satisfaction. Customer satisfaction, as perceived by the employee and employee efficiency has increased; the perception of the agency helping to increase efficiency has declined and job satisfaction has not changed. These questions and the survey results comparison are depicted in Table A.13.
<table>
<thead>
<tr>
<th>Question</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>My customers are _____ satisfied with my work. [Similar to question 87]</td>
<td>Increase</td>
</tr>
<tr>
<td>My organization _____ uses my time and talents well. (organization = center or office) [Similar to question 13]</td>
<td>Increase</td>
</tr>
<tr>
<td>My organization _____ removes things that get in the way of progress. (organization = center or office) [Similar to question 17]</td>
<td>Decrease</td>
</tr>
<tr>
<td>I am _____ satisfied with my job. [Similar to question 54]</td>
<td>NC</td>
</tr>
</tbody>
</table>

Table A.13 Business Results: Employee

Business Results Supervisor

Four of the five responses to questions similar to the 1999 survey questions have declined with the exception being the perception of employee efficiency which has not changed. These questions and the comparison result is presented in Table A.14.
### Business Results: Supervisor

<table>
<thead>
<tr>
<th></th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees’ customers are satisfied with their work.</td>
<td>Decrease</td>
</tr>
<tr>
<td>[Similar to questions 85, 86]</td>
<td></td>
</tr>
<tr>
<td>Our employees’ work products meet all requirements. [Similar to</td>
<td>Decrease</td>
</tr>
<tr>
<td>question 86]</td>
<td></td>
</tr>
<tr>
<td>Our organization uses our employees’ time and talents well.</td>
<td>NC</td>
</tr>
<tr>
<td>[Similar to question 13]</td>
<td></td>
</tr>
<tr>
<td>Our organization removes things that get in the way of progress.</td>
<td>Decrease</td>
</tr>
<tr>
<td>[Similar to question 17]</td>
<td></td>
</tr>
<tr>
<td>Our employees are satisfied with their jobs. [Similar to question</td>
<td>Decrease</td>
</tr>
<tr>
<td>54]</td>
<td></td>
</tr>
</tbody>
</table>

Table A.14 Business Results: Supervisor

### Combined Business Results

The combined employee and supervisor results do not imply a difference between the 1999 and 2005 surveys.
Reengineering

Employee

The reengineering question responses in the 2005 survey showed a decline from the 1999 survey response, but because there are only two questions and the questions only address periphery characteristics of the reengineering concept, no conclusions are drawn from this comparison. The results are presented for interest only in Table A.15 for the employee segment and Table A.16 for the supervisory respondents.

<table>
<thead>
<tr>
<th>Reengineering: Employee</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ of the promotions in my department (center) are based on performance. [Similar to questions 34, 37, 40]</td>
<td>Decrease</td>
</tr>
<tr>
<td>Computer technology has had a _____ on our process redesign. [Similar to question 94]</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Table A.15 Reengineering: Employee
Supervisor

Reengineering: Supervisor

<table>
<thead>
<tr>
<th>Question</th>
<th>Change from 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know who my customers are. [Similar to question 83]</td>
<td>NC</td>
</tr>
<tr>
<td>__________ of the promotions in my department (center) are based on performance. [Similar to question 34, 37, 40]</td>
<td>NC</td>
</tr>
<tr>
<td>Computer technology has had a ______ on our process redesign. [Similar to question 94]</td>
<td>NC</td>
</tr>
</tbody>
</table>

Table A.16 Reengineering: Supervisor

Combined Reengineering Results

As a category the reengineering section has not changed since the 1999 survey. This result is not surprising as reengineering has been used on small projects at the time of the survey, with the intent to develop a precedent and earn support of the process within the organization. The results of the reengineering efforts have not yet been broadly publicized throughout the organization.
APPENDIX B: 1999 KPMG MANAGEMENT SURVEY AUDIT QUESTIONS
ODE Confidential Employee Survey by KPMG Conducted May 1999
N = 406

1. I understand the mission and goals of the Department
2. There is an organization-wide commitment to the mission of the ODE
3. There is a commitment to attaining specific measurable objectives for the Department
4. I understand how my job contributes to the overall mission of the Department
5. I understand the mission and goals of my division.
6. I understand how my job contributes to the overall mission of my division.
7. I believe I share common goals with that of my division and the Department.
8. The Department has a strategic plan that guides its basic mission, purpose, and goals for the future.
9. I believe the Department is an effective advocate for public education within Ohio.
10. The Department quickly and effectively takes action to meet the changing needs and challenges of school districts.
11. Parents concerns are given proper attention and respect in making decisions about Ohio's students.
12. Job priorities are determined through the input of those the department serves.
13. Considering the stated purpose of my job, there are activities I perform which I consider of minimal value to the mission of the department.
14. I am confident of senior management's (Division Heads and above) ability to effectively lead the Department.
15. I am confident of my supervisor's ability to effectively lead my division/office.
16. Management is open and willing to listen to suggestions for improvement.
17. Management is open and willing implement suggestions for improvement.
18. I feel empowered to implement new ideas that will help me let my job done better.
19. Improvement is made by encouraging and supporting people to challenge and question even those things that work well.
20. Management effectively communicates the impact and necessity of change before embarking upon a new initiative.
21. Managers at all levels spend a lot of time helping staff perform well.
22. Functional and cross-functional teams (within division and across divisions) work effectively and efficiently.
23. The Department easily and readily adapts to change.
24. The Department does a good job of evaluating or measuring the effectiveness of individual programs.
25. I usually have a clear idea of what is expected of me in this work unit; I know what I am accountable for.
26. I have relatively little influence over the day-to-day decisions that determine the results of my work.
In this work unit, I am expected to make an independent effort to plan work and decide which actions will produce the best outcomes. Effective use is made of the people and resources in this work unit. I understand the results I am expected to achieve in my job. I receive a formal performance appraisal at least once per year. My performance goals are clearly documented. My performance goals are periodically updated to reflect any changes in overall organizational objectives. I am formally and regularly evaluated against my performance goals or plan. I feel that my performance as reflected in my performance evaluations will help me enhance my career at the Department. I am expected to be accountable for my own development, progress, and work relationships. All rules, policies, and procedures I need to perform my job are clearly defined and documented in a clear and easily accessible fashion. Employees are recognized, promoted and rewarded based upon their accomplishments and contributions to success. Politics do not play much of a role in human resource decisions. The Department spends the right amount of time and emphasis on recruiting and selecting the right people to work here. The Department does a good job of rewarding and retaining the best and brightest employees. The Department takes time to celebrate individual and collective achievements. The Department is capable of moving aside "average" or "adequate" performers to pave the way for more talented up-and-comers. The Department confronts non-performers about their non-performance. The Department has a work environment that allows people to develop to their fullest potential. My job classification has a documented position description. The functions I perform align with my position description. The overall policies, procedures, and organizational structure of the Department are effective in meeting both individuals, and business needs. The concept of professional or skill development at all levels is a basic belief at the Department. I feel that I have received an adequate amount of continuing professional education. Professional development opportunities for Departmental employees are available and useful. Short-term pressures and problems interfere with the opportunity for further professional development. The criteria for determining training needs are clear and fair for each employee. My workload is reasonable.
The Department is an excellent place to work. The morale level among staff within the Department is high. As individuals, we rely on, believe in and treat each other as partners committed to the same mission. As individuals, we discuss our differences openly with those with whom we are in conflict. Department management effectively communicates with the staff. The Department conducts regular staff meetings. Departmental staff meetings occur with sufficient frequency. My division/office conducts regular staff meetings. Division staff meetings occur with sufficient frequency. The Department holds too many meetings. I communicate the results of my work with my supervisor(s) on a formal and frequent basis. The various divisions within ODE work together effectively and in concert. I feel that I do not know enough about what is happening outside of my division. The results of significant management level meetings do not get relayed to staff. The overall quality of communications throughout my division is adequate. The overall quality of communications throughout the Department is adequate. The Department's communications with external entities is good (Legislators, Board of Education or Regents, School Districts, Administrators, Parents, and other interests.) The Department uses e-mail effectively. I receive too many internal memos and e-mail messages. I rely on unofficial communications more than official communications to get the information I need to do my job. The Department gathers best practices from other states through information exchanges. Clear and candid communication of information and ideas exists between individuals and groups within the Department. I do not make or share critiques or suggestions for fear of repercussions. The Departmental culture is that of a customer service organization. I believe the Department's customers (Superintendents, school districts, etc.) think the Department is an effective advocate for public education within Ohio. I am able to see how the results of my work benefit the Department's customers. In my Division/office, there is an emphasis on answering questions from customers as quickly and accurately as possible. The Department effectively forges partnerships with other agencies and organizations to improve our services to customers.
My division establishes and maintains effective relationships with customers.
I know who my internal and external customers are.
My job function requires me to directly communicate with my "customers" on a frequent basis.
Customer satisfaction is routinely measured to improve business processes and relationships.
I understand the concerns and needs of my customers.
The Department listens to its "customers" to improve operations and adapt to changing needs.
The Department's information systems are effective in helping me perform my job duties.
An appropriate level of importance is placed upon information technology in supporting Department operations.
There are many opportunities for process or task automation within my division beyond what already exists.
My division is using information technology to become more effective in carrying out our responsibilities and supporting our customers.
Information technology in my division provides useful and accurate data.
I was adequately trained to use the information technology I have available to me.
The use of automated tools, such as email, voicemail, and the internet, has improved the effectiveness of communications within the department.
My office support tools (word processing, spreadsheet, email, etc.) are adequate.
Information technology helps me to better support my customers outside of the Department.
APPENDIX C: COMPARISON OF SURVEY TO BALDRIGE BENCHMARK

The 2002/2003 Baldrige Board of Examiners Benchmark Questionnaire Results are listed in Appendix D; in this appendix is the comparison of the ODE 2005 survey results to the Baldrige Benchmark (BNQP). The second column of each table identifies whether the ODE response is below, equivalent to or above the benchmark scores. The determination of how the ODE response compares to the benchmark is made by calculating a 95% confidence interval of the ODE responses and comparing this interval to the average of the benchmark responses; if the interval contains the benchmark average the ODE response is equivalent to the benchmark. The interval was constructed using a student t distribution, as a conservative approach given the distribution of the ODE responses to the questions, and in recognition of the differences in the questions and response formats.

For nearly every question where a comparison is made, the ODE response is lower than the benchmark, identifying opportunities that exist for the ODE to change the way work is done that will improve organizational performance. The analysis by Baldrige category is presented in the following sections.
Leadership

Employee

Seven questions in the 2005 ODE survey were based on the Baldrige Survey and all of the ODE responses were lower than the benchmark scores. The responses are presented in Table C.1 for the employees.

Questions based on Baldrige Survey: Leadership - Employee

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know _____ of the ODE’s mission (what it is trying to accomplish). [Based on question 1a]</td>
<td>Lower</td>
</tr>
<tr>
<td>My senior (top) leaders use our agency’s values to guide us _____ of the time. (agency = ODE) [Based on question 1b]</td>
<td>Lower</td>
</tr>
<tr>
<td>My senior leader(s) create a work environment that helps me do my job _____ of the time. [Based on question 1c]</td>
<td>Lower</td>
</tr>
<tr>
<td>The organization’s leaders _____ share information about the organization. [Based on question 1d]</td>
<td>Lower</td>
</tr>
<tr>
<td>My senior leaders _____ encourage learning that will help me advance in my career. [Based on question 1e]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization's leader(s) _____ lets me know what they think are most important. (organization = center or office) [Based on question 1f]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization's (center or office) leader(s) _____ ask what I think. [Based on question 1g]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.1 Comparison to Baldrige Benchmark Survey Leadership
Supervisor

Six questions in the Leadership section were based on questions from the BNQP survey; five of the results were lower than the benchmark score and one response had an equivalent score. (The 95% confidence interval around the ODE result contained the average benchmark value.) These results are in Table C.2.

Questions based on Baldrige Survey: Leadership - Leader

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of our employees that know the Ohio Department of Education (ODE) agency’s mission (what we are trying to accomplish). [Based on question 1a]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our leadership team _____ creates a work environment that helps our employees do their jobs. [Based on question 1c]</td>
<td>No Difference</td>
</tr>
<tr>
<td>Our leadership team _____ shares information about the organization. [Based on question 1d]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our leadership team _____ encourages learning that will help all our employees advance in their careers. [Based on question 1e]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our leadership team _____ lets our employees know what is most important. [Based on question 1f]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our leadership team _____ asks employees what they think. [Based on question 1g]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.2 Comparison with Baldrige Benchmark Survey: Leadership - Leader
Strategic Planning

Employee

Three questions from the strategic planning section were based on BNQP survey questions and all the ODE scores were below the benchmark scores. These questions are listed in Table C.3.

Questions based on Baldrige Survey: Strategic Planning – Employee

<table>
<thead>
<tr>
<th></th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>As it plans for the future, my organization _____ asks for my ideas. (organization = center or office). [Based on question 2a]</td>
<td></td>
</tr>
<tr>
<td>I know the ____ of the parts of my organization’s plans that will affect me and my work. [Based on question 2b]</td>
<td></td>
</tr>
<tr>
<td>I _____ know how to tell if we are making progress on my work group’s part of the plan. [Based on question 2c]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.3 Comparison with Baldrige Benchmark Survey: Strategic Planning – Employee

Supervisor

Three questions from the strategic planning section were based on BNQP survey questions and all the ODE scores were below the benchmark scores. (Table C.4)
Questions based on Baldrige Survey: Strategic Planning – Leader

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The frequency with which our leadership team asks employees for their ideas in the planning process. [Based on question 2a]</td>
<td>Lower</td>
</tr>
<tr>
<td>The extent to which our employees know the parts of our organization’s plans that will affect them and their work. [Based on question 2b]</td>
<td>Lower</td>
</tr>
<tr>
<td>The number or our employees that know how to tell if they are making progress on their work group’s part of the plan. [Based on question 2c]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.4 Comparison with Baldrige Benchmark Survey: Strategic Planning – Leader

Customer and Market Focus

Employee

This section had five questions based on BNQP questions and all of the responses from the ODE survey were below the benchmark scores. (Table C.5)
Questions based on Baldrige Survey: Customer and Market Focus – Employee

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know who _____ of my most important customers are. [Based on question 3a]</td>
<td>Lower</td>
</tr>
<tr>
<td>I regularly keep in touch with _____ of my customers. [Based on question 3b]</td>
<td>Lower</td>
</tr>
<tr>
<td>_____ of my customers tell me what they want. [Based on question 3c]</td>
<td>Lower</td>
</tr>
<tr>
<td>I ask _____ of my customers if they are satisfied or dissatisfied with my work. [Based on question 3d]</td>
<td>Lower</td>
</tr>
<tr>
<td>I _____ have the authority to make decisions to solve problems for my customers. [Based on question 3e]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.5 Comparison with Baldrige Benchmark Survey: Customer and Market Focus – Employee

Supervisor

Of the five questions in this area, three responses were below the benchmark scores, one was not different than the benchmark (Customers tell our employees what they want.) and on the question “Our employees correspond (talk, email or written) with their customers” the ODE response was above the benchmark score. These results are tabulated in Table C.6.
Questions based on Baldrige Survey: Customer and Market Focus – Leader

<table>
<thead>
<tr>
<th>Description</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of our employees that know who their most important customers are. [Based on question 3a]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees correspond (talk, email or written) with their customers. [Based on question 3b]</td>
<td>Higher</td>
</tr>
<tr>
<td>Customers tell our employees what they want. [Based on question 3c]</td>
<td>No Difference</td>
</tr>
<tr>
<td>Our employees ask if their customers are satisfied or dissatisfied with their work. [Based on question 3d]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees have the authority to make decisions to solve problems for their customers. [Based on question 3e]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.6 Comparison with Baldrige Benchmark Survey: Customer and Market Focus – Leader
Measurement, Analysis and Knowledge Management

Employee

Four questions in this area of the survey were based on questions in the BNQP survey and the ODE results were below the benchmark score on each one. (Table C.7)


<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I _____ know how to measure the quality of my work. [Based on question 4a]</td>
<td>Lower</td>
</tr>
<tr>
<td>I _____ analyze (review) the quality of my work to see if changes are needed. [Based on question 4b]</td>
<td>Lower</td>
</tr>
<tr>
<td>I _____ use these analyses for making decisions about my work. [Based on question 4c]</td>
<td>Lower</td>
</tr>
<tr>
<td>I _____ get the information I need to know about how my organization is doing. (organization = center or office) [Based on question 4f]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.7 Comparison with Baldrige Benchmark Survey: Measurement, Analysis and Knowledge Management – Employee
Six questions in this section were based on BNQP questions, and five of the ODE scores were lower than the benchmark scores and one was equivalent to the benchmark score. (Table C.8)

Questions based on Baldrige Survey: Measurement, Analysis and Knowledge Management – Leader

<table>
<thead>
<tr>
<th>The number of ODE employees who know how to measure the quality of their work. [Based on question 4a]</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees know how to analyze (review) the quality of their work to see if changes are needed. [Based on question 4b]</td>
<td>No Difference</td>
</tr>
<tr>
<td>Our employees use these analyses for making decisions about their work. [Based on question 4c]</td>
<td>Lower</td>
</tr>
<tr>
<td>The number of our employees who know how the measures they use in their work fit into our office’s overall measures of improvement. [Based on question 4d]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees get all the important information they need to do their work. [Based on question 4e]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees get the information they need, to know how our organization is doing. (organization = center, office, section or unit) [Based on question 4f]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.8 Comparison with Baldrige Benchmark Survey: Measurement, Analysis and Knowledge Management – Leader
Human Resource Focus

Employee

Of the six questions in this part of the survey four results were below the benchmark response and the other two were not significantly different from the benchmark score.

The questions where the ODE matched the benchmark were on the safety of the workplace and the cooperation of work groups. (Table C.9)

Questions based on Baldrige Survey: Human Resource Focus – Employee

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>I _____ have the authority to make changes that will improve my work.</td>
<td>Lower</td>
</tr>
<tr>
<td>[Based on question 5a]</td>
<td></td>
</tr>
<tr>
<td>The people I work with _____ cooperate and work as a team.</td>
<td>No Difference</td>
</tr>
<tr>
<td>[Based on question 5b]</td>
<td></td>
</tr>
<tr>
<td>My supervisor _____ encourages me to develop my job skills so I can</td>
<td>Lower</td>
</tr>
<tr>
<td>advance in my career. [Based on question 5c]</td>
<td></td>
</tr>
<tr>
<td>I am _____ recognized for outstanding work. [Based on question 5d]</td>
<td>Lower</td>
</tr>
<tr>
<td>I _____ have a safe workplace. [Based on question 5e]</td>
<td>No Difference</td>
</tr>
<tr>
<td>My supervisor and my organization _____ care about me.</td>
<td>Lower</td>
</tr>
<tr>
<td>(organization = center or office) [Based on question 5f]</td>
<td></td>
</tr>
</tbody>
</table>

Table C.9 Comparison with Baldrige Benchmark Survey: Human Resource Focus – Employee

232
Supervisor

Six questions in the current survey were based on BNQP questions, of which five scored lower than the benchmark response and the question concerning a safe workplace was not significantly different from the benchmark response. This analysis is presented in Table C.10.

Questions based on Baldrige Survey: Human Resource Focus – Leader

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees make changes that will improve their work. [Based on question 5a]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees work as a team. [Based on question 5b]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees are recognized for outstanding work. [Based on question 5d]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees have a safe workplace. [Based on question 5e]</td>
<td>No Difference</td>
</tr>
<tr>
<td>Our managers and our agency care about our employees. [Based on question 5f]</td>
<td>Lower</td>
</tr>
<tr>
<td>We encourage and enable our employees to develop their job skills so they can advance their careers. [Based on question 5c]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.10 Comparison with Baldrige Benchmark Survey: Human Resource Focus – Leader
Process Management

Employee

Four questions in this section are based on BNQP questions, with three ODE scores below the benchmark score and the question asking if enough information and resources are available to perform the job meeting the benchmark score. (Table C.11)

Questions based on Baldrige Survey: Process Management – Employee

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I _____ can get all the information and resources I need to do my job.</td>
<td>No Difference</td>
</tr>
<tr>
<td>[Based on question 6a]</td>
<td></td>
</tr>
<tr>
<td>I _____ collect information (data) about the quality of my work.</td>
<td>Lower</td>
</tr>
<tr>
<td>[Based on question 6b]</td>
<td></td>
</tr>
<tr>
<td>We _____ have good processes for doing our work.</td>
<td>Lower</td>
</tr>
<tr>
<td>[Based on question 6c]</td>
<td></td>
</tr>
<tr>
<td>I _____ have control over my work processes.</td>
<td>Lower</td>
</tr>
<tr>
<td>[Based on question 6d]</td>
<td></td>
</tr>
</tbody>
</table>

Table C.11 Comparison with Baldrige Benchmark Survey: Process Management – Employee

Supervisor

All four of the questions in this section based on BNQP survey questions resulted in scores below the benchmark scores and are presented in Table C.12.
Questions based on Baldrige Survey: Process Management – Leader

<table>
<thead>
<tr>
<th>Question</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees can get all the information and resources they need to do their jobs. [Based on question 6a]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees collect information (data) about the quality of their work. [Based on question 6b]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization has good processes for doing our work. (organization = center or office) [Based on question 6c]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees have control over their personal work processes. [Based on question 6d]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.12 Comparison with Baldrige Benchmark Survey: Process Management – Leader

Business Results

Employee

Nine questions in this section were based on BNQP survey questions, and seven of the resultant scores were below the benchmark scores, one was not different than the benchmark and when asked if “My work products ____ meet all requirements” the ODE response was higher than the benchmark score. These questions are listed in Table C.13.
<table>
<thead>
<tr>
<th>Question</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>My customers are _____ satisfied with my work. [Based on question 7a]</td>
<td>No Difference</td>
</tr>
<tr>
<td>My work products _____ meet all requirements. [Based on question 7b]</td>
<td>Higher</td>
</tr>
<tr>
<td>I _____ know how well my organization is doing financially. (How we compare to our budget) [Based on question 7c]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization _____ uses my time and talents well. (organization = center or office) [Based on question 7d]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization _____ removes things that get in the way of progress. (organization = center or office) [Based on question 7e]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization _____ obeys laws and regulations. (organization = center or office) [Based on question 7f]</td>
<td>Lower</td>
</tr>
<tr>
<td>My organization _____ has high standards and ethics. (organization = center or office) [Based on question 7g]</td>
<td>Lower</td>
</tr>
<tr>
<td>The ODE _____ helps me help my community. (organization = center or office) [Based on question 7h]</td>
<td>Lower</td>
</tr>
<tr>
<td>I am _____ satisfied with my job. [Based on question 7i]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.13 Comparison with Baldrige Benchmark Survey: Business Results – Employee
All nine of the questions in this section resulted in scores below the BNQP benchmark scores. (Table C.14)

Questions based on Baldrige Survey: Business Results – Leader

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees’ customers are satisfied with their work. [Based on question 7a]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees’ work products meet all requirements. [Based on question 7b]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees know how well our organization is doing financially. (organization = center or office) [Based on question 7c]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization uses our employees’ time and talents well. [Based on question 7d]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization removes things that get in the way of progress. [Based on question 7e]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization obeys laws and regulations. [Based on question 7f]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization has high standards and ethics. [Based on question 7g]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our organization helps our employees help their community. [Based on question 7h]</td>
<td>Lower</td>
</tr>
<tr>
<td>Our employees are satisfied with their jobs. [Based on question 7i]</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Table C.14 Comparison with Baldrige Benchmark Survey: Business Results - Leader
APPENDIX D: BALDRIGE BENCHMARK SURVEY QUESTIONS AND SCORES
BALDRIGE BENCHMARK SURVEY QUESTIONS AND SCORES

Employee Survey  N = 228  Scores are on a 1-5 scale, with 5 best

1a I know my organization's mission (what it is trying to accomplish)  4.5
1b My senior (top) leaders use our organization's values to guide us.  3.8
1c My senior leaders create a work environment that helps me do my job.  3.7
1d My organization's leaders share information about the organization.  3.8
1e My senior leaders encourage learning that will help me advance my career.  3.8
1f My organization lets me know what it thinks is most important.  3.9
1g My organization asks what I think.  3.6

2a As it plans for the future, my organization asks for my ideas.  3.3
2b I know the parts of my organization's plans that will affect me and my work.  3.7
2c I know how to tell if we are making progress on my work group's part of the plan.  3.8

3a I know who my most important customers are.  4.4
3b I keep in touch with my customers.  4.2
3c My customers tell me what they need and want.  4.0
3d I ask if my customers are satisfied or dissatisfied with my work.  4.0
3e I am allowed to make decisions to solve problems for my customers.  4.0
4a I know how to measure the quality of my work.  4.1
4b I know how to analyze (review) the quality of my work to see if changes are needed.  4.1
4c I use these analyses for making decisions about my work. 3.9
4d I know how the measures I use in my work fit into the organization's overall measures of improvement. 3.6
4e I get all the important information I need to do my work. 3.4
4f I get the information I need to know about how my organization is doing. 3.5
5a I can make changes that will improve my work. 4.1
5b The people I work with cooperate and work as a team. 3.9
5c My boss encourages me to develop my job skills so I can advance my career. 4.0
5d I am recognized for my work. 3.9
5e I have a safe workplace. 4.3
5f My boss and my organization care about me. 3.9
6a I can get everything I need to do my job. 3.9
6b I collect information (data) about the quality of my work. 3.5
6c We have good processes for doing our work. 3.8
6d I have control over my work processes. 3.3
7a My customers are satisfied with my work. 3.8
7b My work products meet all requirements. 4.0
7c I know how well my organization is doing financially. 3.7
7d My organization uses my time and talents well. 4.0
7e My organization removes things that get in the way of progress. 3.4
7f My organization obeys laws and regulations. 3.1
7g My organization has high standards and ethics. 4.6
7h My organization helps me help my community. 4.3
7i  I am satisfied with my job.  3.9
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Our employees know our organization's mission (what we are trying to accomplish).</td>
<td>4.4</td>
</tr>
<tr>
<td>1b</td>
<td>Our leadership team uses our organization's values to guide our organization and employees.</td>
<td>4.0</td>
</tr>
<tr>
<td>1c</td>
<td>Our leadership team creates a work environment that helps our employees do their jobs.</td>
<td>3.5</td>
</tr>
<tr>
<td>1d</td>
<td>Our leadership team shares information about the organization.</td>
<td>4.0</td>
</tr>
<tr>
<td>1e</td>
<td>Our leadership team encourages learning that will help all our employees advance in their careers.</td>
<td>3.7</td>
</tr>
<tr>
<td>1f</td>
<td>Our leadership team lets our employees know what we think is most important.</td>
<td>4.2</td>
</tr>
<tr>
<td>1g</td>
<td>Our leadership team asks employees what they think.</td>
<td>3.5</td>
</tr>
<tr>
<td>2a</td>
<td>As our leadership team plans for the future, we ask our employees for their ideas.</td>
<td>3.1</td>
</tr>
<tr>
<td>2b</td>
<td>Our employees know the parts of our organization's plans that will affect them and their work.</td>
<td>3.3</td>
</tr>
<tr>
<td>2c</td>
<td>Our employees know how to tell if they are making progress on their work group's part of the plan.</td>
<td>3.4</td>
</tr>
<tr>
<td>3a</td>
<td>Our employees know who their most important customers are.</td>
<td>4.3</td>
</tr>
<tr>
<td>3b</td>
<td>Our employees keep in touch with their customers.</td>
<td>4.1</td>
</tr>
<tr>
<td>3c</td>
<td>Their customers tell our employees what they need and want.</td>
<td>3.9</td>
</tr>
<tr>
<td>3d</td>
<td>Our employees ask if their customers are satisfied of dissatisfied with their work.</td>
<td>3.4</td>
</tr>
<tr>
<td>3e</td>
<td>Our employees are allowed to make decisions to solve problems for their customers.</td>
<td>3.8</td>
</tr>
<tr>
<td>4a</td>
<td>Our employees know how to measure the quality of their work.</td>
<td>3.2</td>
</tr>
<tr>
<td>4b</td>
<td>Our employees know how to analyze (review) the quality of their work to see if changes are needed.</td>
<td>3.0</td>
</tr>
<tr>
<td>4c</td>
<td>Our employees use these analyses for making decisions about their work.</td>
<td>2.9</td>
</tr>
<tr>
<td>4d</td>
<td>Our employees know how the measures they use in their work fit into our organization's overall measures</td>
<td>3.1</td>
</tr>
</tbody>
</table>
4e Our employees get all the important information they need to do their work. 3.3
4f Our employees get the information they need to know how our organization is doing. 3.5
5a Our employees can make changes that will improve their work. 3.5
5b Our employees cooperate and work as a team. 3.5
5c We encourage and enable our employees to develop their job skills so they can advance their careers. 3.6
5d Our employees are recognized for their work. 3.7
5e Our employees have a safe workplace. 4.2
5f Our managers and our organization care about our employees. 4.1
6a Our employees can get everything they need to do their jobs. 3.4
6b Our employees collect information (data) about the quality of their work. 3.0
6c Our organization has good processes for doing our work. 3.4
6d Our employees have control over their personal work processes. 3.4
7a Our employees' customers are satisfied with their work. 3.4
7b Our employees' work products meet all requirements. 3.7
7c Our employees know how well our organization is doing financially. 3.5
7d Our organization uses our employees' time and talents well. 3.7
7e Our organization removes things that get in the way of progress. 3.1
7f Our organization obeys laws and regulations. 3.1
7g Our organization has high standards and ethics. 4.6
7h Our organization helps our employees help their community. 4.4
7i Our employees are satisfied with their jobs. 3.7
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Managers Survey  N = 60</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Our employees know our organization's mission (what we are trying to accomplish).</td>
<td>4.4</td>
</tr>
<tr>
<td>1b</td>
<td>Our leadership team uses our organization's values to guide our organization and employees.</td>
<td>4.0</td>
</tr>
<tr>
<td>1c</td>
<td>Our leadership team creates a work environment that helps our employees do their jobs.</td>
<td>3.5</td>
</tr>
<tr>
<td>1d</td>
<td>Our leadership team shares information about the organization.</td>
<td>4.0</td>
</tr>
<tr>
<td>1e</td>
<td>Our leadership team encourages learning that will help all our employees advance in their careers.</td>
<td>3.7</td>
</tr>
<tr>
<td>1f</td>
<td>Our leadership team lets our employees know what we think is most important.</td>
<td>4.2</td>
</tr>
<tr>
<td>1g</td>
<td>Our leadership team asks employees what they think.</td>
<td>3.5</td>
</tr>
<tr>
<td>2a</td>
<td>As our leadership team plans for the future, we ask our employees for their ideas.</td>
<td>3.1</td>
</tr>
<tr>
<td>2b</td>
<td>Our employees know the parts of our organization's plans that will affect them and their work.</td>
<td>3.3</td>
</tr>
<tr>
<td>2c</td>
<td>Our employees know how to tell if they are making progress on their work group's part of the plan.</td>
<td>3.4</td>
</tr>
<tr>
<td>3a</td>
<td>Our employees know who their most important customers are.</td>
<td>4.3</td>
</tr>
<tr>
<td>3b</td>
<td>Our employees keep in touch with their customers.</td>
<td>4.1</td>
</tr>
<tr>
<td>3c</td>
<td>Their customers tell our employees what they need and want.</td>
<td>3.9</td>
</tr>
<tr>
<td>3d</td>
<td>Our employees ask if their customers are satisfied or dissatisfied with their work.</td>
<td>3.4</td>
</tr>
<tr>
<td>3e</td>
<td>Our employees are allowed to make decisions to solve problems for their customers.</td>
<td>3.8</td>
</tr>
<tr>
<td>4a</td>
<td>Our employees know how to measure the quality of their work.</td>
<td>3.2</td>
</tr>
<tr>
<td>4b</td>
<td>Our employees know how to analyze (review) the quality of their work to see if changes are needed.</td>
<td>3.0</td>
</tr>
<tr>
<td>4c</td>
<td>Our employees use these analyses for making decisions about their work.</td>
<td>2.9</td>
</tr>
<tr>
<td>4d</td>
<td>Our employees know how the measures they use in their work fit into our organization's overall measures of</td>
<td>3.1</td>
</tr>
</tbody>
</table>
Our employees get all the important information they need to do their work. 3.3

Our employees get the information they need to know how our organization is doing. 3.5

Our employees can make changes that will improve their work. 3.5

Our employees cooperate and work as a team. 3.9

We encourage and enable our employees to develop their job skills so they can advance their careers. 3.6

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We encourage and enable our employees to develop their job skills so they can advance their careers. 3.6

Our employees are recognized for their work. 3.7

Our employees have a safe workplace. 4.2

Our managers and our organization care about our employees. 4.1

Our employees can get everything they need to do their jobs. 3.4

Our employees collect information (data) about the quality of their work. 3.0

Our organization has good processes for doing our work. 3.4

Our employees have control over their personal work processes. 3.4

Our employees' customers are satisfied with their work. 3.7

Our employees' work products meet all requirements. 3.5

Our employees know how well our organization is doing financially. 3.7

Our organization uses our employees' time and talents well. 3.1

Our organization removes things that get in the way of progress. 3.1

Our organization obeys laws and regulations. 4.6

Our organization has high standards and ethics. 4.4

Our organization helps our employees help their community. 3.7

Our employees are satisfied with their jobs. 3.0