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Analyzing the Evolution of Supply Chain Management Best Practices by Tracking Changes in the Baldrige Criteria

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By

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The Performance Excellence Criteria for the Malcolm Baldrige National Quality Award are widely accepted as an accurate reflection of quality management best practices. Since being introduced in 1988, the Baldrige Criteria have undergone regular revisions in an attempt to reflect the evolution of these best practices. This thesis examines the evolution of the elements of the Baldrige Criteria dealing with supply chain management (SCM) by conducting a detailed content analysis of each version of the Criteria since 1988. Our analysis includes an examination of changes in point values for SCM elements of the Baldrige Award over time. We also present an analysis of the distribution of the point values in each version of the Criteria across six key dimensions of SCM, as well as an analysis of how the SCM elements in the Baldrige Criteria compare with best practices as represented by the Supply Chain Operations Reference model.

Key words: Baldrige Criteria, supply chain management

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CHAPTER I

INTRODUCTION

Background

There are various considerations that companies must be mindful of to be successful. Quality is one such area. Whether it is quality of a service or quality of a product, the significance of making quality a top priority is paramount. Some might assume that a strong focus on quality might cause a company to neglect other essential issues in the company. However, in dealing with aspects of quality, it becomes apparent that they permeate the entire company and beyond. Addressing quality issues will address a large number of problems a company can expect to face.

Quality has evolved a great deal since the 1980's when it was primarily an inspection process of looking at scrap, rework, and warranty costs. It later began to include such activities as reducing cycle times, improving product transport between functions, eliminating errors and delays, designing based on customer needs and desires, and improving employee satisfaction (Hodgetts, 1993). With this evolution comes a pronounced difficulty in dealing with quality. A useful tool for properly attending to quality is the Malcolm Baldrige Criteria for Performance Excellence which is used in determining Malcolm Baldrige National Quality Award recipients. It serves as a guide that, when correctly implemented, can give a company a reliable method for attaining

quality ideals. The use of such tools to improve quality can reduce the problems a company has and allow them to move on to other avenues for improvement.

Quality encompasses a large number of areas for scrutiny. An essential quality area that the Baldrige Criteria includes is supply chain management. Though not a major category, scoring relative to the supply chain shows up throughout the Criteria every year. Since its inception, the overseers of the Baldrige Criteria have endeavored to present the best possible plan to aid businesses in creating an effective quality program. As a result, the Baldrige Criteria is updated yearly or biannually based on recommendations from companies involved with the Baldrige Program, including past winners of the Malcolm Baldrige Quality Award (Baldrige National Quality Program, 1988-2010). This allows the Baldrige Criteria to evolve and continue to address the growing complexity of quality's role in an increasingly dynamic business atmosphere. As changes occur relative to quality, Criteria dealing with the supply chain are also altered. Observing the role the supply chain has in the Criteria and how this role has changed there and the market place can serve as an area of interest to companies looking to improve or assess their supply chain. By observing, analyzing, and outlining the changes made to the Baldrige Criteria relative to adjustments made to supply chain best practices and the motivations for these changes over the years, documentation can be compiled to serve as an organized reference for observing historical trends in the quality movement, and in particular, the supply chain movement.

Problem Statement

This research examines two high priority elements of management systems, quality and the supply chain. More specifically, the central topics are supply chain

management and the Malcolm Baldrige Criteria. Given the Malcolm Baldrige Criteria's reputation in the United States for its ability to present key concepts for addressing quality over time, there is a possibility that it may also reflect best practices for addressing supply chain management since the supply chain has a strong relationship with quality management. The Baldrige Criteria's function as a source of supply chain best practices has not yet been confirmed. This research is intended to define the extent of its role in supply chain management.

As stated earlier, the Baldrige Criteria is widely accepted as an accurate method for measuring the state and progression of quality initiatives relative to the market. It is intended to possess all of the essential principles for quality management. The government, large and small businesses, non-profit organizations, and health care entities across the nation help to verify its legitimacy (Baldrige National Quality Program, 1988-2010). The Malcolm Baldrige Criteria may also show such a correlation with supply chain management best practices. If the Malcolm Baldrige Criteria keeps pace with, reflects, and/or measures supply chain management best practices, then the criteria can be verified as a source of SCM best practices.

In its past and present forms, supply chain management overlaps with key components of the Baldrige Criteria. Leadership, strategic planning, information analysis, and customer focus are just a few of the areas for inspection in the Baldrige Criteria. These same areas of inspection for quality can serve as necessary principles for the management and improvement of the supply chain. In this study, two types of information are depicted. The first is the changes that have occurred in the Malcolm Baldrige Criteria over time relative to the supply chain. The other is the relationship

between the changes made in the Malcolm Baldrige Criteria as compared to changes in supply chain best practices in the market, as reflected in the supply chain management literature. The relationship between supply chain management best practices and supply chain initiatives presented in the Baldrige Criteria has been established and patterns of development for both outlined. Analysis of these patterns has led to insight into these relationships and potential future developments. These insights help clarify the Baldrige Criteria's role as a model for presenting supply chain management best practices.

Methodology

An analysis of the progression of the Malcolm Baldrige Quality Criteria and supply chain management best practices reveals any similarities in concepts and changes made in both. This led to the identification of areas for further analysis in the determination of and reasons for commonalities and differences between the two areas. Supply chain best practices, as reflected in the literature, have been viewed in their early years and any transformations observed over time have been described. The Baldrige Criteria and its progression relative to the supply chain has also been outlined. Only the aspects of the Baldrige Criteria that show direct correlation with supply chain management are included. The Baldrige Criteria is broken down into categories and scoring is allocated to items within each category. It seems logical that the portions of the Baldrige Criteria relevant to the supply chain should be organized or grouped into suitable areas of study.

To help organize the supply chain initiatives that appear in the Baldrige Criteria, they have been grouped into different classifications for the purpose of this research. Every year was examined and any supply chain initiatives were identified and classified.

The Baldrige Criteria has a category that shows up each year in some form called Planning. Planning is a classification used for this research and the only classification taken directly from the Baldrige Criteria's categories. This is due to the consistent presence of supply chain initiatives routinely found in the Planning category in addition to the points allocated to it. While scanning the Baldrige Criteria, there were many supply chain tenets that were concerned with examining data. Consequently, another classification that was used for this research is Data Analysis. Other supply chain ideals that became apparent in reviewing the Baldrige Criteria dealt with communication within the supply chain and joint efforts to accomplish tasks concerned with the supply chain. Therefore, Communication and Collaboration are two other classifications used in this study. There were other supply chain Baldrige Criteria principles that dealt with the implementation of supply chain initiatives. These were placed in the Deployment classification. Finally, there were years that had criteria that were concerned with making enhancements to the supply chain or supply chain tasks. Such criteria were classified as Improvement in this research. It should be noted that during some years, certain classifications may or may not show up. Identifying such shifts and determining why they occurred will be a part of this research.

The classifications used in this research appear appropriate because they are related to widely accepted engineering management functions. Engineering management has four commonly accepted functions: planning, organizing, leading, and controlling (Morse and Babcock, 2007). The following list gives descriptions of these functions and their importance. Following the management functions is a list of the classifications and an explanation of what goes into them.

Management Functions

- Planning- Planning provides a method of identifying objectives and designing a sequence of activities for accomplishing these objectives. Planning is considered the most important function. The other three functions have little value without this function. An essential part of planning is decision making. Decision making is a sub-function to planning. Though decision making is important to all functions, it is typically regarded as a component of planning.
- Organizing- Organizing is defined as the designing and maintaining of the system of roles that people and resources have and how these roles relate to each other. This is a very team-focused concept.
- Leading- Leading is the process of getting the cooperation of others in accomplishing a desired goal.
- Controlling- Controlling is the process of measuring performance and taking action to ensure the desired results. Controlling is critical because it confirms the other management functions go as planned.

(Morse and Babcock, 2007)

Research Classifications

- Planning- Includes supply chain elements that deal with planning and strategy
- Data Analysis- Includes supply chain elements that involve the collection and examination of data

- Communication- Includes supply chain elements primarily concerned with communication in the supply chain
- Collaboration- Includes supply chain elements that involve working in cohesive units to accomplish objectives for the supply chain. Collaboration goes beyond just communication and emphasizes teamwork
- Improvement- Includes supply chain elements that involve adjustments to increase supply chain performance
- Deployment- Includes supply chain elements that involve the execution of supply chain initiatives

Table 1 gives descriptions of the relationships between the management functions and research classifications.

Table 1 Relating Management Functions and Supply Chain Classifications

Management Function / Classification	Planning	Organizing	Leading	Controlling
Planning	Planning is the only management function directly used as a classification. This seems appropriate since there are many supply chain elements in the MBC that relate directly to Planning. The MBC includes a Planning category for scoring each year.			
Data Analysis	Data analysis is a key area in decision making which is an integral part of planning.			Controlling involves measuring performance which involves data analysis.
Communication		For participants in a supply chain to have clear understanding of their responsibilities effective communication in the supply chain is required.	Leaders must be effective communicators to get the cooperation necessary to achieve common goals. This may include consulting, instructing and giving feedback	
Collaboration		Once effective communication has taken place the assigned duties must be carried out. Many of these duties will require joint efforts or teams	Leaders must be effective at working with team members in addition to effective communication.	
Improvement				Taking action on the measured performance involves making improvements
Deployment				Ensuring desired results implies that once the proper outcome is attained the results must be put into action

Tasks and concepts associated with these six classifications allow for more specific representations of supply chain management tenets that are present in the Baldrige Criteria than if the four management functions were used.

Below is an example of the type of table that was used to show the supply chain elements included in the Baldrige Criteria for each year. It gives the research classifications represented during the year and the initiatives that belong to each. The larger sample table(all such tables are located in Appendix B) that accompanies table 1 gives a description of what each supply chain initiative entails according to the Baldrige Criteria. In addition, it gives an estimate of how many points are allocated to the supply chain element, as well as its location in the Baldrige Criteria. These estimates are arrived at using the Baldrige Criteria's scoring system. Every year points are allocated to items within each category in the Baldrige Criteria. Depending on how many supply chain elements are included in each item, the points are uniformly distributed to each component of the item. Any component that deals with supply chain management is taken and placed in the table with its approximated score. These scores quantify the emphasis the Baldrige Criteria places on different areas each year.

Table 2 1990 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Supplier Planning data • Supplier planning input	• Scope and management of Supplier quality info • Quality Trends	• Senior Executive Leadership	• Quality Priorities • Teams with supplier involvement • Quality Assurance • Supplier awards and recognition • Logistics Support	• Supplier quality requirements • Quality Assessment • Supplier Quality improvement • Quality improvement trends	• Supplier quality requirements

Table 3 Description of Supply Chain Elements contained in the 1990 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Supplier Planning data	Supplier data used for planning and feasibility evaluation	26	3.1 b.	5.5
Supplier Planning Input	How suppliers and customers contribute to planning	26	3.1 d.	5.5
Data Analysis	**Description**			
Scope and management of quality data and info	Scope and type of supplier quality data	25	2.1 b.	11
Quality Trends	Trends in key indicators of quality supplies and services in terms of company key requirements and actions to improve supplier quality	32	6.4 a. b.	20
Communication	**Description**			
Senior executive leadership	Leadership and involvement in meeting with suppliers and customers	24	1.1 a.	7
Collaboration	**Description**			
Quality Priorities	How the company will ensure that suppliers are able to meet its quality requirements	26	3.3 c.	6.25
Teams with supplier involvement	Approaches to group participation like teams and involvement of suppliers and customers	27	4.2 a.	8
Quality Assurance	Verification that company quality requirements are met by suppliers, distributors, and other external providers; selection, relationships, audits, inspections, recognition programs, training, assistance	27	5.7.1 b	6.25
Supplier awards and recognition	Highlight awards and recognition of suppliers and role company played in quality improvement	32	6.4 c.	10
Logistics Support	Logistics(infrastructure) support to enable customer contact employees to provide effective and timely customer service	33	7.2 f	3
Improvement	**Description**			
Supplier Quality Requirements	Determination of requirements like supplier quality improvements	26	3.1 e	5.5
Quality Assessment	How assessment findings are translated into improvements such as processes, practices, training, and supplier requirements	30	5.4 c	3.75
Supplier Quality Improvement	Strategy and efforts to improve quality and responsiveness of suppliers	31	5.7 b	10
Quality Improvement Trends	Focus on awards company suppliers received and role company played in improvements	28	6.2.2 c	10
Deployment	**Description**			
Supplier Quality Requirements	How specific requirements are deployed to suppliers	26	3.1 f.	5.5

The scoring for each area and how these scores change each year are depicted using radar charts. The radar chart has each research classification included and the estimated point total allocated to it for that year. The research classification and its supply chain initiatives are represented in the table with each initiative's approximate scoring percent. The supply chain initiatives within each classification are summed up and the total percentage for each classification is represented in the radar chart. The 1990

radar chart is shown next. These charts give a visual representation of how each classification is scored during a given year. They make the observation of the changes in scoring over time easier as well.

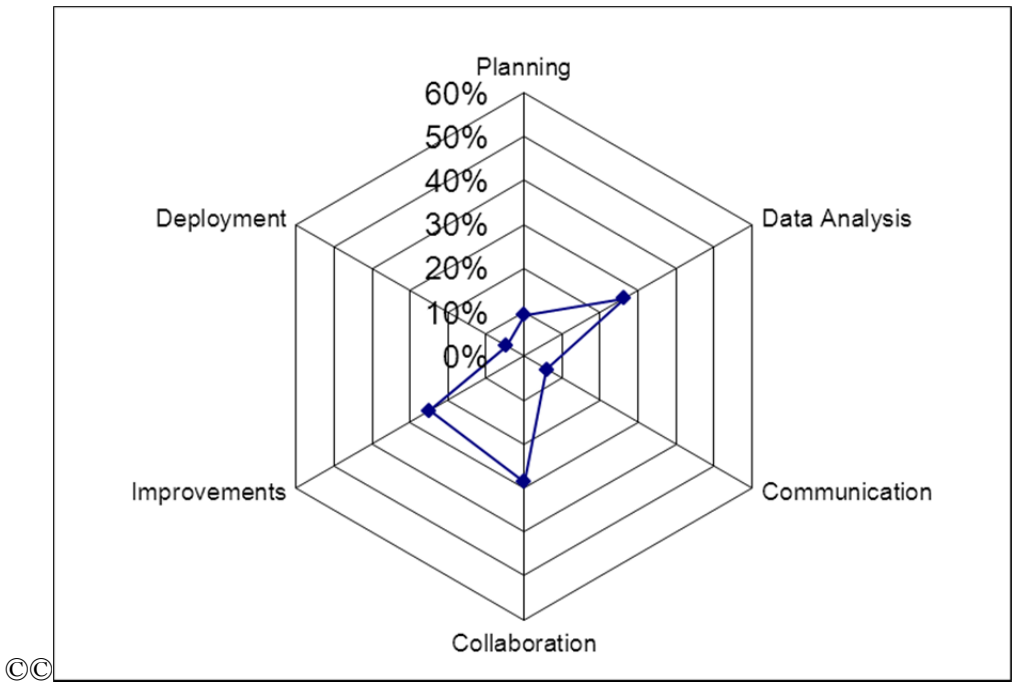

Figure 1 Radar Chart Illustrating Estimated Percentage of Points Allocated to Each Area of Supply Chain Management in the 1990 Baldrige Criteria

The connections between supply chain management best practices and the Baldrige Criteria are the major focus of this analysis. Recognizing, organizing, and analyzing these relationships are a primary goal of this research.

Below is a concise summary of the list of steps in the methodology used in this research:

1. Conduct a literature review on supply chain management best practices focusing on how the SCM best practices have changed over time.
2. Conduct a literature review on the history of the Baldrige Criteria.
3. Go through every year of the Baldrige Criteria and identify elements of the Criteria that deal with the supply chain.
4. Classify the SCM elements that appear in the Baldrige Criteria.
5. Organize the supply chain items in each year according to these classifications.
6. Relate these classifications to engineering management functions to demonstrate their validity.
7. Organize each year's SCM classifications and principles into tables.
8. Create radar charts to give visual representations of how points are allocated to each classification.
9. Analyze the resulting information. Analysis will include observing changes in classifications, scoring, etc.
10. Make tables of supply chain best practices organized by research classifications and note the changes over time.
11. Identify similarities and differences between the supply chain best practices and Baldrige Criteria supply chain initiatives over time.

12. Conduct research on outside documents concerning the Baldrige Criteria to gain further insight into its evolution. Pinpoint the information that relates to the supply chain and use it to aid in the analysis process.

CHAPTER II

LITERATURE REVIEW: MALCOLM BALDRIGE CRITERIA

Malcolm Baldrige Criteria Inception

The Malcolm Baldrige National Quality Award was established by Public Law 100-107 through the signing of the Malcolm Baldrige National Quality Improvement Act in 1987 to honor Malcolm Baldrige for his efforts to improve U.S. competitiveness. The first awards were presented in 1988 and continue to be presented yearly(now bi-annually) by the president. It is administered by the National Institute of Standards and Technology within the Department of Commerce (along with a private foundation). It serves to recognize quality success and merit in U.S. companies which Dr. Baldrige strongly supported. He served as Secretary of Commerce and was an industrial leader before his untimely death in a rodeo accident. He strongly believed that senior leaders in a company should display their commitment to quality and productivity; by setting aside time to make their presence felt on plant floors, they gained personal knowledge of how products and services are planned, created, and distributed. The Baldrige Award also serves to endorse awareness of the relation between quality and the domestic and international market success. The Baldrige Award became a primary component of quality promotion and an essential competitive device (Reimann and Smyth, 2003). Attainment of this award continues to be the highest level of acknowledgment for performance excellence in the United States. The wide ranging reception of the Malcolm

Baldrige Criteria as a comprehensive quality measure indicates the belief that it possesses the major dimensions of quality management systems that quality experts such as Deming, Juran, Gryna, and Garvin envisioned (Curkovic, Melnyk, Calantone, and Handfield, 2000).

Though the actual number of award recipients is not very high, the requests for copies of the Baldrige Criteria are. The primary influence experienced relative to the Baldrige process is in the area of self-assessment. Numerous entities such as companies, schools, health care organizations, government agencies, and non-profit organizations use the Baldrige Criteria as a gauge. As opposed to trying to win the award, the Baldrige Criteria is often used to evaluate quality efforts, reference reports on effective quality strategies, and aid in the building of an integrated structure through the alignment of business requirements. Organizations constantly strive to advance their capabilities along with overall performance. This can be more effectively done by utilizing a blueprint that allows for comparison with best practicing companies (Reimann and Smyth, 2003). The company is allowed to strategically determine how to effectively and efficiently implement quality and address customer needs (Curkovic, Melnyk, Calantone, and Handfield, 2000).

Malcolm Baldrige Criteria Early History

At the time of the signing of the Malcolm Baldrige Criteria into law, foreign competition had strongly challenged the product and process quality of the United States. The U.S. productivity had grown slowly compared to foreign competitors over the preceding twenty-year period. Poor quality was resulting in as much as a 20 percent deficit in sales revenues nationally. Strategic planning for quality and quality

improvements was cited as a necessity if there was any hope of reversing the aforementioned trends. Such endeavors had to be management led and customer oriented. This marked the required fundamental changes in the way U.S. entities conducted business (Baldrige National Quality Program, 1988-2010).

The award has had its share of criticism over the years. For instance, some of the award recipients have suffered financial losses. Also, a few of the techniques endorsed have been called into question. There's also the complaint that the simple pursuit of the award requires a great deal of expense. None of this negates the fact that the purpose of the Baldrige program is to help U.S. firms become the best quality producers possible. Some of these criticisms are negated since the Criteria, and thus the award, is progressive in that it is updated yearly to adjust for shortcomings and new discoveries that can be of use for future reference (Hodgetts, 1993). A financial study from the early to mid-1990's was used to help shed light on the success of past Baldrige Criteria winners' quality programs. Key operating measures were used to show the performance of 17 firms that had won the award. The majority showed impressive financial accomplishments in customer service, production costs, product reliability, defect or failure rates, and cycle time. Increases in employee quality training and employee productivity along with a decrease in number of suppliers and warranty costs were other achievements that displayed the award's importance. This study showed that the quality improvement initiatives of the 17 companies had a positive effect on the operational traits of each firm (Wisner and Eakins, 1994).

Another part of the study was trend and industry analyses which are generally used to track performance. A trend analysis tracks a firm's financial performance over

time, and an industry analysis compares a firm's financial performance to industry averages. Only four of the firms were used in these analyses. The overall results for the firms were mixed. All four experienced notable market growth during the recession that was ongoing during the times of the data analyzed. However, two of the firms experienced decreases in profitability from 1989 to 1992. Though not definite, the overall study gives strong evidence of the many benefits the Baldrige Criteria can create for companies that utilize its concepts (Wisner and Eakins, 1994).

Another study involving what was referred to as the Baldrige Index also shows both the effectiveness of Baldrige concepts and the difficulty encountered in remaining relevant in a dynamic environment. The Baldrige Index represents a fictitious stock fund composed of publicly traded U.S. companies who received the Malcolm Baldrige Award between 1994 and 2003. During the first eight years of the study, the Baldrige Index consistently outperformed the S&P 500 by 3 to 1, 5 to 1, and up to as much as over 6 to 1. However, due to the large portion of technology companies that make up the award winners and struggling technology stocks, the Baldrige Index in the last years of the study failed to outperform the S&P but with steadily improving numbers, going from ratios of -.53 to 1 and -.71 to 1 up to ratios of .85 to 1 and .93 to 1. This study was discontinued due to the majority of recipients beginning to include business units of larger publicly traded companies, privately held companies, or non-profit organizations. The latter two organizations do not issue or trade stocks on public exchanges and business units cannot be disaggregated from the whole corporation (NIST, 2004).

CHAPTER III

LITERATURE REVIEW: SUPPLY CHAIN HISTORICAL TRENDS

Supply Chain Defined

A supply chain can be defined as a network of production and distribution services with agreements to perform the tasks of attainment of materials, conversion of the materials to intermediate and/or finished products, and distribution/promotion of final products to retailers or customers (Dudley, 2002) It involves four fundamental processes, which are planning, sourcing, making, and delivering (Steeples, 1994). While the above actions take place, value-added efforts along with information facilitation must be carried out (Min and Zhou, 2002). Value can be extracted from the collaboration of firms relative to five critical flows: information, product, service, financial, and knowledge (Bowersox, Closs, and Cooper, 2002). Supply chain management is a large subtopic in production and operations management. It includes all activities necessary for producing and delivering final products or services.

A supply chain is characterized by a forward flow of goods and a mostly backward flow of information, though many times the information flows both ways (Min and Zhou, 2002). The goal of information flow is to relay a view of reality upstream while historical data can be accessed and analyzed (Franks, 2003). In general, a supply chain is assumed to be composed of two major business processes, material management and physical distribution. This is where a subset of supply chain management, logistics,

comes in. Though varying definitions exist, logistics is the work needed to move and position inventory throughout the supply chain (Bowersox, Closs, and Cooper, 2002). Material management deals with the acquiring and storage of raw materials, parts, and supplies. These fall under the category of inbound logistics. Physical distribution is concerned with order receipt, processing, inventory deployment, storage and handling, transport, consolidation, promotion, returns, and life cycle maintenance. These can be described as outbound logistics (Min and Zhou, 2002). These are more recent definitions; however, the historical information that follows will show that defining the terms supply chain, logistics, and supply chain management has been a topic of deep scrutiny for years.

Pre-Supply Chain Management

During the 1950's and 1960's, the majority of manufacturers focused on mass production to minimize unit production costs as the main operations strategy. This strategy involved only a little product or process flexibility. New product development was sluggish and mainly dependent on in-house technology and capacity. Excess inventory was the method for dealing with bottlenecks which led to large investments in work-in-process (WIP) inventory. The sharing of technology and expertise with customers or suppliers was deemed too risky. Little emphasis was given to cooperative and strategic buyer-supplier partnerships. The 1970's showcased the development of material requirements planning. Managers began to recognize the consequences of large WIP inventories relative to manufacturing cost, quality, product development, and delivery lead time. Manufacturers turned to new materials management concepts to improve performance (Tan, 2002). At this time, true supply chain management was

basically nonexistent in American industry. Manufacturers typically made the majority of the parts used to create finished products. When outside materials and services were needed, purchasing departments, viewed mainly as order takers and order placers, were used. Such departments had minor visibility, were perceived to add little value to the bottom line, and were generally not well respected by other portions of the organization (Moore, Baldwin, Camm, and Cook, 2002).

Supply Chain Management: Establishment

The severe global competition of the 1980's forced world class organizations to offer low-cost, high quality, and reliable products with greater design flexibility. Just-In-Time (JIT) and other management programs were used to improve manufacturing efficiency and cycle time. Given the manifestation of a fast paced environment with limited inventory for addressing production problems, manufacturers became aware of how beneficial and essential strategic and cooperative buyer-supplier relationships would be to their firms. The concept of supply chain management was born while manufacturers experimented with strategic partnerships with immediate suppliers. Logistics experts went further in defining supply chain management by including physical distribution, transportation, and warehousing functions (Tan, 2002).

The establishment of supply chain management can be found in the textile industry. In 1984, intense competition in the textile and apparel industry across the globe led to the creation of Crafted With Pride in the USA by leaders in the US apparel industry. In 1985, Kurt Salmon Associates conducted a supply chain analysis on the apparel industry. The results showed the delivery time in the apparel supply chain was 66 weeks, 40 of which were spent in warehouses or transit. Major losses to the industry

came from financing inventory and the inability to get the right product to the right location in a timely manner. The Quick Response (QR) strategy was developed to combat these issues. QR was an agreement in which retailers and suppliers share information to respond more quickly to consumer needs. Notable changes that resulted from the study were the industry adoption of the UPC code used by the grocery industry and the adoption of a set of standards for electronic data interchange (EDI) between companies. Retailers installed Point of Sale (PoS) scanning systems to quickly send sales data to distributors and manufacturers. Quick Response included marketing information on promotion, discounts, and forecasts in the manufacturing and distribution plan. It maximized inventory profitability by placing company dollars where and when they were needed based on PoS data and sales history (Lummus, Krumwiede, and Vokurka, 2003.)

Early Progress in Supply Chain Management

In 1992, a group of grocery industry leaders formed a joint industry task force called the ECR (Efficient Consumer Response) Working Group. The group had the job of examining the grocery supply chain to find ways to make the chain more competitive. Kurt Salmon Associates was given the task of looking at the chain and finding what improvements in cost and service could be attained through changes in technology and business practices. The study showed that other than further advancement of EDI and PoS systems, little change was needed technologically. The study did lead to the discovery of a set of best practices that would greatly improve the overall performance of the supply chain. Building on QR initiatives while moving to a wider scope of issues, the ECR movement gave birth to the practices discussed below (Lummus, Krumwiede, and Vokurka, 2003).

Category management first appeared in 1987 when certain companies shifted from brand management to management by category. With the creation of ECR, it took on the meaning of a process that encompasses managing product categories as business units and customizing them on a store-by-store basis to meet consumer demand. Each category or product group could be treated like a business which management stocked accordingly based on demographic and PoS data. Category management was also supported by EDI and barcode applications. Another development was the concept of Continuous Replenishment (CRP). This was a digression away from pushing product from inventory holding areas to pulling products onto grocery shelves according to consumer demand (Lummus, Krumwiede, and Vokurka, 2003). It allowed for the controlling and monitoring of the flow of goods. CRP was dependent on good trade relations which necessitated shared business practices and information systems with a huge reliance on EDI. Computer-assisted ordering was the automatic generation of store restock orders with minor management input based on current and historical PoS data, delivery data, and sales forecasts. This process was originally done by store clerks who manually scanned barcodes for items with limited stock. Flow-through-distribution was aimed at accelerating the transport of products to the retail store by reducing storage and handling. EDI, bar coding for scanning, and specific warehouse designs were needed to make this process efficient. EDI is a technology that permits the sharing of information between organizations in the supply chain. With the help of this technology, the organizations could institute more appropriate business strategies. EDI was considered the primary ECR enabler since its main focus was integration of functions and firms along the supply chain. Activity-based-costing (ABC) provided the financial and

operations information for boosting management improvement initiatives. It encompassed cost of products, services, processes, activities, distribution channels, customer segments, contracts, and projects. Profits were also an important output of activity based costing. Management's attention was placed on cost sources and decisions that preceded activities. ABC was a pertinent tool for increasing profitability by removing or reducing unnecessary costs (Harris, Swatman, and Kurna, 1999).

Companies across various industries made adjustments as well to their supply chain management practices. Hewlett Packard efficiently connected their distribution activities with manufacturing activities in the computer terminal business in the early 1990's. Changes included the physical distribution of the product and a new distribution requirements planning (DRP) system. The DRP combined customer orders with forecasts and functioned as the beginning pull in the supply chain. Whirlpool created a team of executives in 1992 for its supply chain implementation. In addition to establishing a new vice-president of logistics position, they established cross-functional teams for key product areas, and required single source contracts with suppliers based on reliability and capacity to lend support in product design. Georgia-Pacific Corporation began implementing supply chain management concepts in the decentralized operations of the company. Originally, traffic managers in each division were responsible for inbound and outbound shipments for their unit. As a result, shipping priorities were splintered and customers (both internal and external) were dissatisfied. In response, a new centralized Transportation and Logistics Division was established to coordinate and restructure the distribution process (Lummus and Vokurka, 2001).

The evolution of supply chain management pressed on into the 1990's as organizations extended best practices in managing corporate resources to include strategic suppliers and the logistics function. To avoid the repetition of non-value-added activities such as receiving inspection, manufacturers placed the onus on suppliers' quality control by purchasing from a handful of certified suppliers. Manufacturers began leveraging supplier strengths and technology to bolster new product development efforts. Retailers were able to properly integrate with their logistics providers to achieve direct store delivery while eliminating inspection of incoming materials. Studies in SCM progressed along two veins until joining into a common body of literature that maintained an emphasis on integration, customer satisfaction, and business results. The purchasing and supply side was concerned with purchasing and supply management functions of industrial buyers while the transportation and logistics view dealt with the transportation and physical distribution functions of the retailers (Tan, 2002).

Further Developments

An early practice of optimizing individual departments at the expense of others has proven to be detrimental to the company. Early efforts directed at supply chain improvement were focused on internal savings. This prevented benefits from reaching downstream customers. Companies then looked to the lack of internal cooperation as an area for development. In 1994 Jack Welch, CEO of General Electric, discussed the need to eliminate boundaries and turf wars within a company. In spite of such initiatives, departments proved extremely stubborn and inhibited supply chain improvements driven by both internal and external needs. Engineering made designs with limited manufacturability. Manufacturing made products that sales and marketing didn't want to

sell, much less advertise. Functional/departmental excellence was pursued over delivering the right products and services to the right customers. Breaking these barriers was a huge challenge for companies to overcome (Poirier, 1999). Strategic partners in a supply chain must understand that purchasing is an important link between sources of supply and the organization that involves support from overlapping operations to boost manufacturability for both the customer and the supplier. The involvement of purchasing in concurrent engineering is crucial for selecting components to guarantee the required amount of quality is designed into the product and to help reduce design-to-production cycle time (Tan, 2002).

When supply chain management merged into a common body of knowledge that included all of the value adding activities, researchers saw the need to incorporate SCM in the overall business planning process which, according to Carter and Narasimhan, was not widely practiced before 1994. Superior supplier capability can lead to excellent quality and brisk integration of the latest technological breakthroughs into the buying firm's own products through early involvement of suppliers. Their earlier involvement in product design may also lead to more cost-effective design choices, development of alternative conceptual solutions, appropriate selection of components and technologies, and aid in design assessment. With the emergence of global competition, organizations have scaled back, shifted their focus to core competencies, and strived to achieve a competitive advantage through better management of internal and external value-adding activities. The focus on internal competencies has led to greater dependence on suppliers to support non-core requirements (Tan, 2002). Advanced Manufacturing Research, a Boston-based consulting firm, created a supply chain model that placed emphasis on

material and information flow between manufacturers and their partners. They were of the opinion that these adjustments were necessary due to the following changes in manufacturing:

- Greater sharing of information between customers and retailers
- Substitution of horizontal business processes for vertical departmental functions
- Move from mass production to customized products
- Greater dependence on purchased materials and outside processing being accompanied by reduction in supplier base
- Greater focus on organizational and process flexibility
- Need to manage processes over multiple sites
- Employee empowerment along with the institution of rules-based real time decision support systems
- Pressure for speedy introduction of new products to market

(Vokurka and Lummus, 1999)

Managers in companies throughout the supply chain must have a strong interest in the performance of the other companies and collaborate to make their supply chain competitive. They attain facts about the market and coordinate their operations with their partners. Technology is utilized to collect data on market demands and transfer such information to other organizations. The links between each node in a supply chain are critical for effective synchronization of the entire supply chain (Vokurka and Lummus, 1999).

Supply chain management in its infancy was viewed as a tactical mechanism for managing logistics, work flows and related data. Many earlier documents seemed to use supply chain and logistics interchangeably. At that time the supply chain or logistics was viewed under too narrow a scope. Many thought of it in functional terms such as transportation and distribution. Others had a more operational view by considering it a tool to reduce cost and improve customer service. Some were scraping the surface of supply chain thinking by viewing sales, logistics, and manufacturing as a connected system. Only a small group grasped the need to analyze the extended supply chain including suppliers, manufacturers, distributors, retailers, and customers as an integrated economic and operating system. Logistics had to be linked to strategy as a source for competitive differentiation (Copacino, 1997).

Intensive Research Efforts

During the mid to late 1990's several industry collaborative groups emerged to research areas of supply chain management. These groups were tasked with formulating guidelines for "best practices" in supply chain design and the rapid implementation of such practices. One such group, the Supply Chain Council, had in a short time grown from 69 members to over 800 of the world's largest manufacturers. They were responsible for the development of a supply chain operations reference model (SCOR) to help companies examine their supply chain performance, identify weaknesses, and take appropriate actions for improvement (Vokurka and Lummus, 1999). The SCOR model is the instrument within this research used to evaluate the Malcolm Baldrige Criteria's validity as a source of supply chain best practices.

In 1998 the Council of Logistics Management amended the definition of logistics to denote that it was a subset of supply chain management (Knolmayer, Mertens, and Zeier, 2002). Supply chain management began to take on a more encompassing definition than logistics. It was defined to involve areas not usually included in logistics like information systems integration and coordination of planning and control activities. It went beyond the scope of logistics by striving to make business processes more effective and efficient. Logistics was defined to be primarily concerned with the physical flow of materials and was mainly characterized as a functional operation within the organization. More specifically it involved the process of planning and controlling flow and storage of goods and services from origin to the customer. It included inbound, outbound, internal, and external movements of materials. When compared to supply chain management, it began to be characterized as more tactical or operational and to represent the actual execution of supply chain management activities (Lummus, Krumwiede, and Vokurka, 2001).

Around the time the Supply Chain Council was making adjustments to definitions for logistics and supply chain management, other research was being conducted into supply chain management best practices. A University of Maryland Supply Chain Management Center found that 20 percent of Fortune 500 companies employed a Chief Logistics Officer (CLO) who was directly accountable to the CEO. Such officers and the new generation of more powerful vice presidents of supply chain that became the norm in later years were bringing down the walls between internal departments in addition to the enterprise and key partners in the value chain (Boyson, Corsi, Dresner, and Harrington, 1999).

Supply chain researchers such as Masters and Pohlen have documented the chronology of the changes in management styles over time. The 1960's and 1970's were dominated by a functional style of management. The 1980's saw the shift towards internal integration and the 1990's saw a move to external integration. This is of interest because companies potentially can be over 30 years behind current best practices (Boyson, Corsi, Dresner, and Harrington, 1999).

Supply Chain Management in the 21st Century

In the past, companies have focused their attention on speed and cost-effectiveness which became popular goals of supply chain management. Obviously, such goals changed in the industrial cycle. Maximizing speed was the goal when business was going well, but when the market went bad firms attempted to minimize supply costs. Due to such fluctuations, companies whose supply chains were more efficient and cost effective had a gradual erosion of performance over time. In spite of increased efficiency in many companies' supply chains, the percent of products whose prices were marked down in the United States increased from under 10% in 1980 to over 30% in 2000. Surveys of customer satisfaction showed a dip in regard to product availability over the same period. Only certain supply chains such as Walmart, Dell, and Amazon have enjoyed a competitive advantage and efficiency is likely not the reason. Research shows that there are three qualities a supply chain must possess in the 21st century-agility, adaptability, and alignment (Lee, 2004).

Agility

First, a supply chain must be agile, i.e. they must be adept at responding to changes in supply and demand. Dr. Hau Lee was involved in two studies during the 1990's. In both studies, he observed a scenario where companies would be in need of product that was located in factory stock. However, the "best practice" of not moving the container until it was full would delay shipments by a week or so, causing stocked-out stores to be unable to fulfill customer requests. When companies announced new product promotions, stockouts averaged a 15% increase even if supply chains were prepared to deal with changes in demand trends. Mark downs result from the delivery of no longer needed full containers of product. To get rid of the excess, companies must reduce the price. Department stores sell as much as a third of their merchandise at discounts. Such markdowns reduce profits and brand equity. In order to instill agility into their supply chain, companies must make data available on supply and demand continuously so necessary responses can come quickly. Most companies that become good at this use the internet to do so and allow all firms to have the same supply and demand data simultaneously. Collaborative relationships must be fostered with suppliers and customers so companies can work as teams for the design and/or redesign of processes, components, and products. Products should be designed so that in the early stages they share similar parts and processes and differ significantly only by the end of the production process. This is a strategy referred to as postponement and is an excellent way to deal with demand fluctuations because it gives companies a time cushion to receive appropriate information on consumer preferences. Companies should also maintain a small inventory of inexpensive, easily transported parts that are often the

source of bottlenecks. Finally, they should create a dependable logistics system to allow the company the ability to respond to unexpected occurrences. Third party logistics providers can be utilized for this purpose if necessary (Lee, 2004).

Adaptability

Companies must be able to adapt their supply chains in a timely fashion to the evolution of market structures and strategies. This is critical for companies to achieve and maintain a competitive advantage. In addition to fluctuations in supply and demand, supply chains also encounter likely-permanent shifts in the market. Such shifts can occur as a result of economic progress, political or social change, demographic trends, or technological advances. The best supply chains take note of market changes by collecting information, getting rid of unneeded data, and tracking important trends. As appropriate, the organization will relocate facilities, alter supply sources, and outsource manufacturing. This strategy is also good for new product launches or entrance into new markets. In 2001 when Microsoft went into the video game market with the X-Box, it decided to outsource hardware production to Flextronics in Singapore. Flextronics was aware the X-Box had to be in stores before December because Microsoft intended to target Christmas shoppers. Since time to market was going to be extremely important, the X-Box was manufactured at expensive facilities in Mexico and Hungary that had engineers that could aid Microsoft in quick design changes and spec modifications. In addition, these locations were close to the X-Box's largest markets, the United States and Europe. Once time to market became of less significance and Sony made cost cuts to shift consumer focus to price, Flextronics moved the X-Box's supply chain to China so

Microsoft could offer similar discounts. By 2003, X-Box took 20% of the video game market from Playstation 2.

Proper adaptation of the supply chain means certain actions must be carried out. Managers must understand the needs of the ultimate consumers and not just the immediate customers. Not doing so can cause a company to experience a bullwhip effect. New suppliers must be developed that are complementary to current suppliers. Product design teams should also be informed of the supply chain implications of their designs (Lee, 2004).

Alignment

Finally, there must be alignment between the goals of all the firms in the supply network so that when the companies work to maximize their own interests, they optimize the entire supply chain's performance. Many companies like to set up vendor-managed inventories close to their assembly plants for convenience. Suppliers can track component consumption, reduce transportation costs, and support multiple manufacturers. In spite of so many advantages, some issues can still arise. Suppliers, which are typically smaller companies than their manufacturing partners, must bear the financial burden of inventories. Interest rates are higher for them than for the larger manufacturers. The supply chain as a whole can suffer from not only higher costs but also issues between members of the supply chain. This can be addressed by creating relationships in which firms share the risks, costs, and rewards in an agreeable fashion. RR Donnelley, the world's largest printer in the late 1990's, did exactly this. Realizing how essential the quality and reliability of its paper and ink suppliers were, RR Donnelley consulted them on ways to improve processes and products. In addition, RR

Donnelley offered to share any savings from the suggestions with the suppliers. Since then, its supply chain has continued to improve (Lee, 2004).

There are various considerations for alignment of the supply chain. First, information such as forecasts, sales data, and plans must be available to every company in the supply chain. Next, the identities must be aligned. The roles and responsibilities of a manufacturer's partners must be clearly defined to prevent the likelihood of conflicts. Finally, incentives must be aligned so that when returns are maximized, the whole supply chain can reap the benefits (Lee, 2004).

Historical Background Summary

There were great strides made in supply chain improvement over the course of the 1990's. It went through various names such as partnering, logistics reengineering, process redesign, and distribution-channel improvement. Early efforts were focused on reduction of costs by improving purchasing, logistics, and distribution functions (Poirier, 1999). It evolved in recent years to take on a more competitive realization (Spekman, Spear, and Kamauff, 2002). It has surfaced as a solution to the issue of combining demand and supply side management. In general, leading firms that gain a strategic advantage through logistical competency determine the nature of their particular industry's competition (Bowersox, 2002). Demand management and factory effectiveness must be linked to realize the full potential in a supply chain (Franks, 2003). As opposed to considering manufacturing rivals, the entire supply chain has been deemed the more appropriate apparatus for study. Firms now compete as a collection of cooperative partners who each contribute value to enhance the capabilities and experience of all involved to accomplish otherwise unattainable objectives. In dealing

with this reality, the ability to leverage partners' abilities beyond tangible assets and explicit knowledge is vital. Finding a way to understand such information will allow for insight into partners' core competencies. These serve as the crucial components of a relationship that unlocks the value adding ability of a supply chain. Quantifying the improvements can be difficult, but return on assets, increase in market share and sales, and higher stockholder returns are possible measurements. Benefits can range from minimally reduced costs, to improved processes, up to all around better quality. In closer relationships with more openness, innovation is improved through joint development efforts. There is controversy that some general skills and assets are worthwhile considerations such as employee expertise, reputation, and culture (Vokurka and Lummus, 1999).

CHAPTER IV

BALDRIGE CRITERIA ANALYSIS PART 1

Analysis Introduction

The focus of this paper is how well the Malcolm Baldrige Criteria reflects supply chain best practices since its inception. To accurately present this, the years with substantial revisions and more specifically, the years with any significant changes to its supply chain initiatives must be identified and explored. A look at the history of the Baldrige Criteria will help give insight into pinpointing years that need emphasis. Below is a graph showing the amount of points allocated to within the Criteria to supply chain issues each year. As seen in Figure 2, the weight given to supply chain issues has been fairly stable since 2003 at around 10-12% of the total 1000 points. The accompanying Table 4 shows the amount of scoring given to the seven Baldrige Categories and the supply chain for three representative years. Easily seen is the importance of the supply chain given its scoring when compared to the Categories that compose the scoring for the award. The supply chain enjoys comparable scoring to many of the Categories within the Criteria.

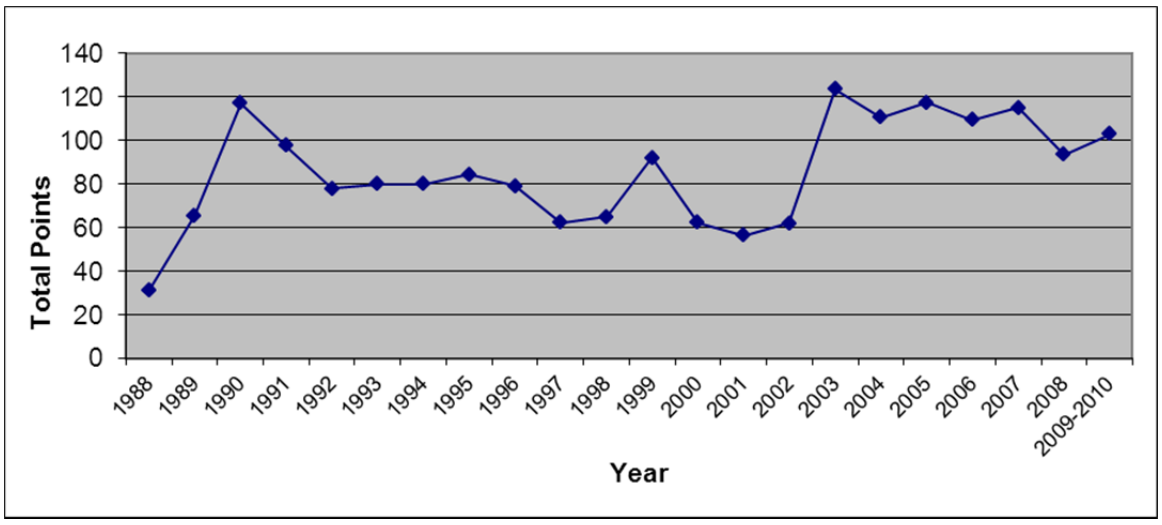

Figure 2 Illustrating the yearly trends in total supply chain points

Table 4 Illustrating the allocation of the 1000 points to the seven Baldrige Criteria categories and the supply chain points for chosen years

1991 Baldrige Criteria		**1996 Baldrige Criteria**		**2009-2010 Baldrige Criteria**	
Categories	*Max Points*	*Categories*	*Max Points*	*Categories*	*Max Points*
Leadership	100	Leadership	90	Leadership	120
Information and Analysis	70	Information and Analysis	75	Measurement, Analysis, and Knowledge Management	90
Strategic Quality Planning	60	Strategic Planning	55	Strategic Planning	85
Human Resource Utilization	150	Human Resource Development and Management	140	Workforce Focus	85
Quality Assurance of Products Services	140	Process Management	140	Process Management	85
Quality Results	180	Business Results	250	Results	450
Customer Satisfaction	300	Customer Focus and Satisfaction	250	Customer Focus	85
Supply Chain Initiatives	97.8	Supply Chain Initiatives	79	Supply Chain Initiatives	103

Even though the Malcolm Baldrige Criteria was intended by its creators to be applicable to any type of business, in 1988, the Criteria was easiest for manufacturers to utilize. This seems appropriate since the focus of the quality movement during this time was on manufacturing, particularly the automobile and electronics industries. Following four consecutive years of substantial revisions, the 1992 Criteria became pertinent for manufacturers *and* service companies. Small businesses were still hesitant concerning

the Criteria because of the formality required by the Criteria for processes they could handle informally. Curt Reimann, the original leader of the Baldrige program reports spending 400 hours making changes to the 1991 Criteria (Evolution of the Baldrige Criteria, 2007).

As a way to guarantee the Baldrige Criteria for Performance Excellence remains relevant, the U.S. Department of Commerce, National Institute of Standards and Technology(NIST) reviews the high performance drivers each year(as of 2009, reviews were changed to every two years). The results of these analyses are used to validate and refine the Malcolm Baldrige National Quality Award. In spite of such efforts, critics have questioned the Criteria's ability to remain relevant since it fails to depict the newest management techniques. There is a purpose to this approach. In order to meet the standards for being incorporated into the Baldrige Criteria, a management practice must be properly evaluated. Such evaluation involves evidence of widespread practice and performance outcomes. A new practice may work well in a particular organization but not in another. It must be substantiated that the practice results in high performance in various types of organizations including small and large, manufacturing and service, union and nonunion, and public and private (Evolution of the Baldrige Criteria, 2007).

Because it typically takes two years for a new practice to prove its worth, the Baldrige Criteria is designed to trail behind the newer, unproven techniques. The Baldrige Criteria depicts the leading, validated management practices that are needed to achieve optimum performance. The Criteria requires, in various areas, that the organization make sure work processes are current with changing business needs:

- Creating a customer focused culture and building customer relationships
- Keeping performance measurement systems up to date
- Using performance review finding to encourage continuous and breakthrough improvement and innovation
- Improving key work processes

(Evolution of the Baldrige Criteria, 2007)

Supply Chain Operations Reference Model

For all the analysis that can be done on the Baldrige Criteria relative to supply chain initiatives, without an external effective tool or resource to measure and analyze its ability to continuously reflect supply chain best practices, these efforts are fruitless. The literature review provides information concerning the history of the supply chain and supply chain management. Within that history are intensive research efforts toward determining supply chain best practices. Though various entities are cited for such efforts, the premier research effort relative to the supply chain was conducted by the Supply Chain Council. This research entity is responsible for creating a model that is supported by numerous supply chain experts within an increasing membership of reputable organizations from various industries. Moreover, the model's validity rests on their research efforts, recommendations, and observations through its application. As a result, the Supply Chain Operations Reference Model is the best option for validating the Malcolm Baldrige Criteria as a consistently relevant source of supply chain best practices.

The Supply Chain Operations Reference (SCOR) Model is the creation of the Supply-Chain Council(SCC), an independent non-profit, global corporation with a membership open to all companies and organizations with a vested interested in utilizing and advancing state of the art supply chain management systems and practices. Its methodology, diagnostic, and benchmarking tools help organizations make noticeable and rapid advances in supply chain processes. The SCC was organized in 1996 by Pittiglio Rabin Tood & McGrath (PRTM) and AMR Research. At its inception, the SCC was comprised of 69 voluntary member companies. The council has since grown to around 800 corporate members worldwide, the majority of whom are practitioners representing an extensive cross-section of industries including manufacturers, distributors, and retailers. In addition, participants include technology suppliers and implementers, academicians, and government organizations that aid in the development and maintenance of the SCOR Model. The SCOR model endeavors present a consensus representation of supply chain management. It gives a unique framework that connects business process, metrics, best practices, and technology into a unified structure to facilitate communication among supply chain partners as well as improvement in effectiveness of supply chain management activities. The SCOR model was created in such a way to describe the business activities required for all phases of satisfying customer demand. Several sections within the model are organized around five management processes: Plan, Source, Make, Deliver, and Return. These process building blocks allow the SCOR Model to be applicable to simple or extremely complex supply chains through the use of a common set of definitions. The SCOR model consists of 4 major components:

- Performance- standard metrics to describe process performance and define strategic goals
- Processes- standard definitions of management processes and process relationships
- Best Practices- management practices that produce significantly better process performance
- People- standard definition for skills required to perform supply chain processes.

Primarily the Best Practices and to a lesser degree the Processes section will be most important for this research. The performance section of SCOR is composed of two elements: performance attributes, which are a grouping of metrics used to express a strategy, and metrics, which measure the ability of a supply chain to accomplish strategic attributes. SCOR recognizes five performance attributes:

- Reliability- the ability to perform tasks as expected
- Responsiveness- the speed at which tasks are performed
- Agility- the ability to respond to external influences
- Cost- the cost of operating the process
- Assets- the ability to efficiently utilize assets

The process section gives a group of predetermined descriptions for activities most companies undertake for the proper functions of their supply chains. Plan, Source, Make, Deliver, and Return are the typical macro-level SCOR processes. The best practices section is organized by original objective. The SCOR portion focuses on improving overall supply chain operational performance and will be the focus for the

comparative research with the Malcolm Baldrige Criteria. These best practices place emphasis on Reliability, Responsiveness, Agility, Cost and/or Asset Management Efficiency performance attributes. GreenSCOR portion looks at the environmental footprint of the supply chain and the Risk Management section looks at mitigating risks concerning undesirable events and limiting the impact of as well as improving potential recovery from such events. These areas of the Practices section will not be needed since this research is focused on how well the Baldrige supply chain initiatives accomplish the objective of maximizing supply chain performance, the same objective as the SCOR best practices. Best practices are best defined as distinctive methods for configuring a set of processes, automating a set of processes and/or performing a set of processes that result in substantially better outcomes (Supply Chain Council, 2010).

The SCOR model is developed and sustained through the voluntary efforts of the Supply Chain Council members. SCOR models that predate Version 6.0 were developed in a Committee structure that was directed to maintain a stable, usable model for present and incoming members. After 2002, with confidence in the Model's stability bolstered by five years of application experience by Council members, the Supply Chain Council moved its technical development toward specific implementation issues. Project team volunteers from Supply Chain Council members became responsible for this technical development process directed at specific model challenges (Supply Chain Council, 2010).

Analysis Methods

For proper validation, a widely respected, appropriate, applicable measuring tool is needed for comparative analysis. There is no better apparatus for identifying supply chain best practices than the Supply Chain Operations Reference (SCOR) Model

introduced earlier in this research. Two levels of analysis are used in this research for validation purposes, succinct snapshot analyses and more in-depth classification analyses. For the quicker method, a general summary of the year accompanied by snapshots in the form of charts and tables are presented of the Baldrige Criteria and the SCOR Model over time for quick and simple comparative purposes. This will help in identifying and expounding on where and why such shifts occurred. Tables containing Baldrige Criteria supply chain initiatives organized by research classifications are included along with tables containing SCOR Model supply chain best practices organized in the same fashion. The tables will be from around the same time. This allows for direct quick comparison to gain an idea of how the Baldrige Criteria compares to the SCOR Model in number of items as well as the types of items present in each classification over a lengthy timeframe. The Radar Charts introduced in the methodology section are used to show trends in classification percentage point scoring for relevant years. Every year chosen for analysis is compared to the following relevant analysis year to get a general grasp on the emphasis the Criteria places on different classification areas over time and any shifts in emphasis. The radar chart below shows an example of such a comparison.

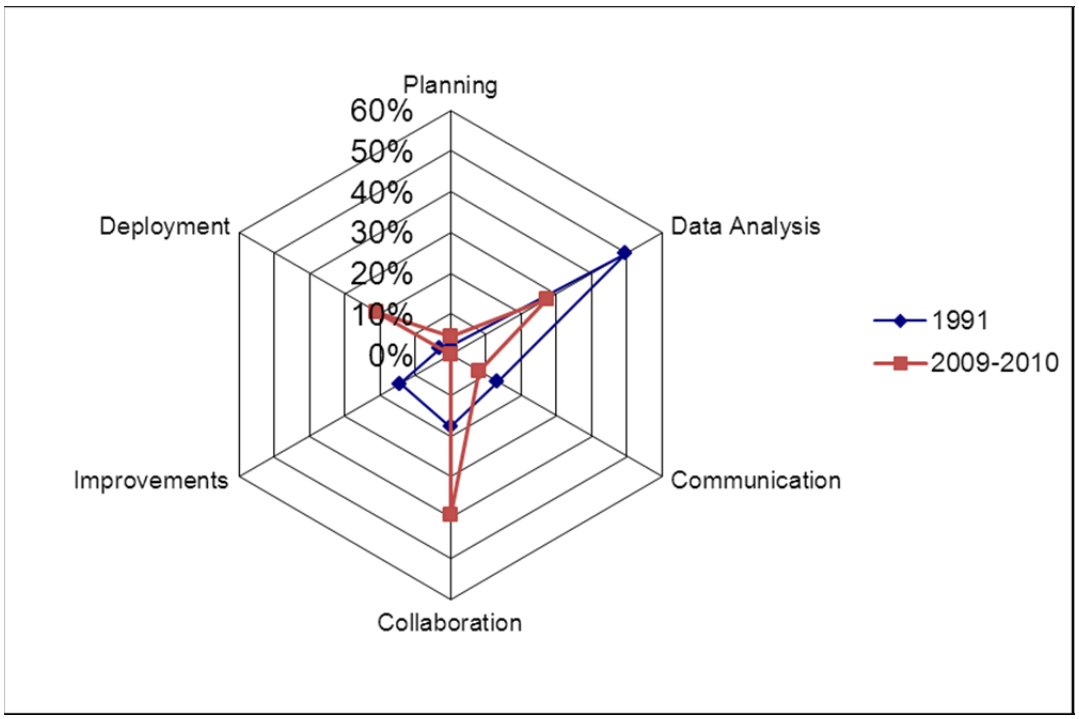

Figure 3 1991 vs 2009-2010 Comparison of total scoring and classification scoring emphasis

It should be noted that the Baldrige Criteria's inception was 1988 while the SCOR Model was created in 1996. The earliest SCOR best practices table will still be used as a snapshot for Pre-SCOR Baldrige Criteria years. However, a Pre-SCOR best practices table is also included to see how the Baldrige Criteria and earliest SCOR Model compare to early research concerning best practices. Kurt Salmon Associates conducted the earliest known analysis of a supply chain in the early 1990's. This research produced a set of best practices which are described in the literature review. These best practices are what comprise the Pre-SCOR table. As the years progress past the SCOR Model's initial year, only the SCOR Model's best practices are shown. These yearly snapshots for comparative analysis give an indication of how relevant the Baldrige Criteria has been

over time in regard to industry supply chain best practices. The more in-depth classification analysis that follows will help gain further comprehension in any areas of uncertainty.

Classification Decisions

In deciding on how a supply chain initiative is classified, the primary focal points for consideration in this research are the implementation of the initiative versus the purpose or objective the initiative is intended to complete. Since the purpose is more likely to be unclear or the purpose may be completely unrelated to the initiative itself, the actual implementation methods or the "how to" components of the initiative are used for determination of proper classification. In the event the methods themselves are unclear or difficult to clearly classify, the purpose serves as a potential secondary manner for classification of the initiative in question. Regardless of what criteria is used in classification decisions, proper data must be identified in aiding such decisions. The following are the data from Baldrige documents that were used in this research to justify the classifications made:

- Baldrige Criteria Description- The Baldrige Criteria description of an initiative is typically the best way to determine the classification of an initiative. Other data is used in the event that the description leaves proper classification up for debate.
- Baldrige Criteria Category/Sub-Category- The Category and/or sub category in which the initiative resides may help give insight into proper classification

- Approach/Deployment vs. Results- Some Baldrige Criteria document label initiatives as being approach/deployment oriented or results oriented. This can further aid classification endeavors.
- Indicator/Effective Practices- Depending on the document and initiative, the Baldrige Criteria may have indicators or effective practices associated with the initiative in question that can be used for appropriate classification.

Summary of Early Years: 1988-1990

In 1988, the Malcolm Baldrige Criteria saw its first participants. This was the first year the Criteria was established and followed by various entities for recognition and quality improvement. The examination categories at this time were Leadership, Information and Analysis, Strategic Quality Planning, Human Resource Utilization, Quality Assurance of Products and Services, Results of Quality Assurance of Products and Services, and Customer Satisfaction. Within these categories there were sub-categories. In various sub-categories, efforts directed at the supply chain were and continue to be evident. In this paper, the supply chain related tenets are extracted and placed in the classifications outlined in the methodology. Though the first year had very few supply chain initiatives, the 1989 and 1990 Baldrige Criteria had an explosion of supply chain initiatives, many of which were rooted in the total quality management movement that was gaining steam in the United States. Such initiatives called for audit, assessment, and improvement in quality focused areas. Team based endeavors along with education and training were also initiatives that give an idea of what the early Baldrige Criteria days were emphasizing for its participants. Quality priorities and requirements

were common supply chain issues that had to be addressed in order to satisfy Baldrige Criteria self –assessment (Baldrige National Quality Program, 1988-1990). The initiatives for these early years can be found in Appendix B. The analysis that follows will take a journey through the evolution of the Baldrige Criteria from the total quality management era to the shift deep into the performance excellence period.

1991 Baldrige Criteria Summary

The series of books *Baldrige Award Winning Quality: How to Interpret the Malcolm Baldrige Award Criteria* by Mark Graham Brown represents the first reference guide for the clarification and interpretation of the Baldrige Criteria. This series of books is utilized in this research for gaining a deeper understanding of the Baldrige Criteria, specifically the supply chain tenets it entails.

The Malcolm Baldrige Criteria was created in 1987 to promote TQM as an essential approach for ensuring American products and services were the best in the world. The criteria were designed to be very general because they had to be applicable to service and manufacturing organizations as well as all ranges of sizes from organizations with a few hundred employees to those with thousands. As a result they were difficult to interpret. The Baldrige Criteria was in existence for three years before the *Baldrige Award Winning Quality* books entered publication. The first book was published in 1991 and covered the 1991 Baldrige Criteria. The most important trend taking place in American business during this time, which was presumed would continue through the 1990s, was the implementation of a new method for managing an organization, Total Quality Management (TQM) (Graham, 1991).

Changes from 1990 Baldrige Criteria

There were few changes from the 1990 Criteria. The only changes of note were the consolidation of certain areas and elimination of others that did not appear useful after further review. Since this research is intended to focus on the Baldrige Criteria and how well it reflects industry supply chain best practices, the information extracted from these books during relevant years will center on supply chain concepts as opposed to TQM in general. The snapshot analysis below presents a table of the supply chain initiatives from the 1991 Baldrige Criteria organized by the classifications discussed in the methodology. In addition, the Pre-SCOR best practices table and the first SCOR best practices table are also included along with observations for each. Going forward, a radar chart comparing the present and previous analysis year will also be included (Graham, 1991).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 5 1991 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategic quality planning process	• Scope and management of supplier quality info • Competitive benchmarking • Quality trends • Benchmarking supplier quality results	• Supplier quality communication • Supplier quality assurance	• Senior executive leadership • Design and intro of quality products/services	• Supplier quality assessment • Supplier quality improvement	• Quality goals and plans

Table 6 Pre-SCOR Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
None	• Category management • Computer assisted ordering • Activity based costing(ABC) • Point of sale data	• EDI(Electronic data interchange)	• EDI(Electronic data interchange) • Continuous replenishment • Flow through distribution • Efficient consumer response(ECR)	None	None

Table 7 SCOR Model 3.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
•Responsiveness and flexibility development •Integrated business and supply chain planning •Integrated demand and supply planning •Collaborative planning •Capacity and resource planning •Strategic and business plan alignment •Strategic sales and operations planning •Re-planning process	•Cross industry benchmarking process •Automated statistical process control •Standards and measurement alignment •Periodic review of metrics and strategy •ABC	•EDI resource integration	•Supply/demand process integration •Joint service agreements •EDI resource integration •Supply/demand plan chain visibility •VMI •Collaborative planning •Concurrent engineering •Supplier development programs •Supplier certification programs •ECR	•Reliable continuous improvement •Supplier development programs •Continuous improvement	•Integrated demand and supply planning •Strategic sales and operations planning

Observations

- Baldrige Criteria was quality focused at this time, whereas quality is not mentioned in either best practice table
- Kurt Salmon Associates best practices ECR, EDI, and ABC are present in the SCOR Model's best practices

- Benchmarking is a noticeable similarity in the SCOR model and the Baldrige Criteria
- SCOR Model is noticeably more Planning and Collaboration intensive
- SCOR Model has noticeably more items in general than the Baldrige Criteria
- Baldrige Criteria is more focused on Data Analysis than other areas
- SCOR places respectable emphasis on Data Analysis

1995 Baldrige Criteria Summary

By 1995, virtually every U.S. company had heard about the Baldrige award and had some degree of familiarity with the total quality management (TQM) approach to running a company. From 1988 to 1995, hundreds of articles were published on the Baldrige Award and how companies were leveraging the award to improve their operations. During this time, TQM evolved beyond the early years of being an add-on approach that included some statistical analysis of quality, training, and the formation of teams of employees for problem solving (Graham, 1995).

Total quality management came under fire due to what were perceived as flaws in the approach. Many perceived this to be due to implementation mistakes rather than the defectiveness of TQM. Success with TQM became rooted in the need for the integration of its philosophies and practices into everyday business operations. During this time of change, TQM received various labels such as continuous improvement or re-engineering. Even so, the basic premises of the TQM movement remained valid and in place at successful companies. However, the 1995 Baldrige Criteria saw a huge shift or

expansion of emphasis. It no longer called for a TQM effort. In fact, the word "quality" was pretty much expunged from the entire 1995 Criteria. It was the most changed of any Criteria before it. From the 1995 Baldrige Criteria forward, the Baldrige Criteria became focused on how a business was run, not just the quality effort, though the word "quality" was used extensively in previous versions. This particular year, quality became one of *many* measures a successful organization needed to strive to improve. A balance was sought among customer satisfaction, employee satisfaction, and business results (Graham, 1995).

A major reason the 1995 Baldrige Criteria began to place a stronger emphasis on a balance between quality, business results, and customer satisfaction was the fact that some companies had found themselves in financial dilemmas or even gone out of business altogether in spite of their outstanding levels of customer satisfaction and quality. As a result, the Baldrige Criteria became less prescriptive than past Criteria so that the *approach* to getting results received less focus. This encourages a large variety of methods and gives organizations the freedom to adapt approaches as needed to fit their organization and culture (Graham, 1995).

At this point, the Baldrige Criteria had established itself as a common framework for understanding the theories, tools, and approaches associated with the quality movement. In addition, companies were sharing and communicating for the betterment of the parties involved. Just five years prior, this would never have been the case, as companies were private about business matters and more likely to share information that would hurt competitors rather than help them (Graham, 1995).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 8 1995 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
➢ Strategy Development	➢ Supplier performance results	➢ Supplier requirements	• Senior executive leadership • Design and introduction of products/services	➢ Supplier management	➢ Strategy deployment

➢ This bullet represents the entrance of a new initiative

Table 9 SCOR Model 3.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
•Responsiveness and flexibility development •Integrated business and supply chain planning •Integrated demand and supply planning •Collaborative planning •Capacity and resource planning •Strategic and business plan alignment •Strategic sales and operations planning •Re-planning process	•Cross industry benchmarking process •Automated statistical process control •Standards and measurement alignment •Periodic review of metrics and strategy •ABC	•EDI resource integration	•Supply/demand process integration •Joint service agreements •EDI resource integration •Supply/demand plan chain visibility •VMI •Collaborative planning •Concurrent engineering •Supplier development programs •Supplier certification programs •ECR	•Reliable continuous improvement •Supplier development programs •Continuous improvement	•Integrated demand and supply planning •Strategic sales and operations planning

➢ This bullet represents the entrance of a new best practice.

Observations

- Five new Baldrige initiatives make debut
- Noticeably fewer Baldrige Criteria initiatives than during the quality era
- Departure of quality intensive initiatives
- Performance results make debut

- These are results of refocus of the Baldrige Criteria on Performance Excellence as discussed in the summary

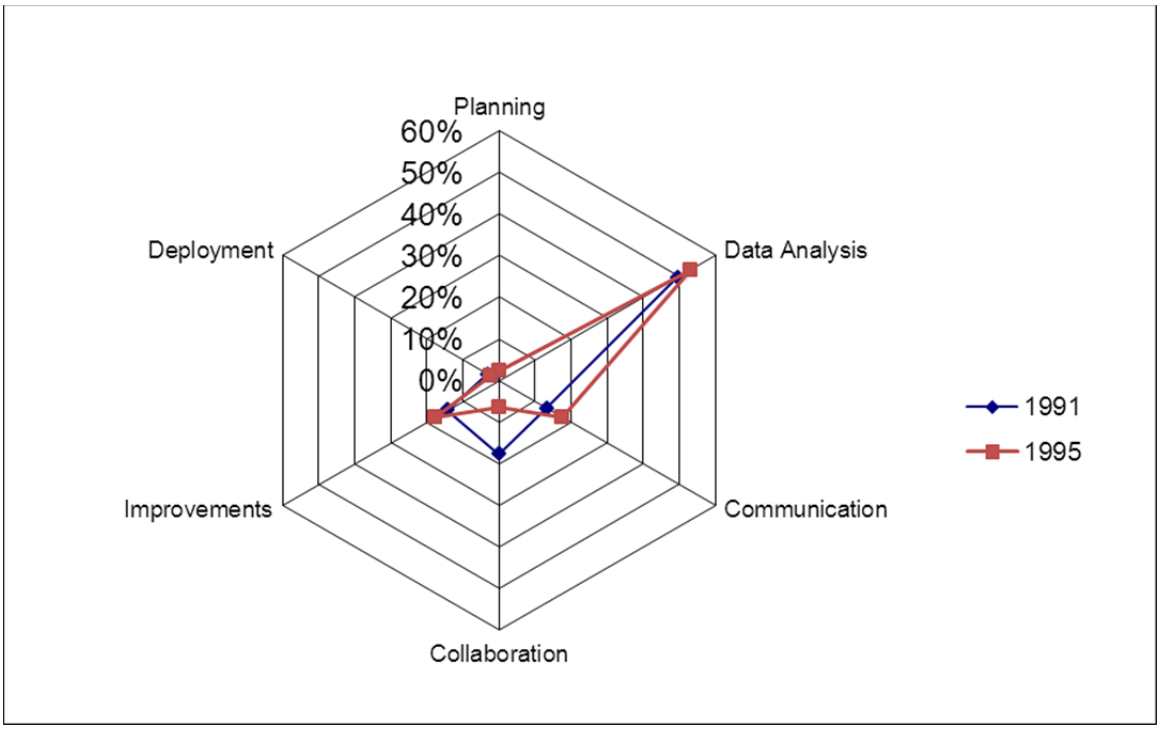

Figure 4 1991 vs 1995 Comparison of total scoring and classification scoring emphasis

Observations:

- Noticeable drop in scoring dedicated to supply chain initiatives
- Classification areas similar in emphasis between years
- Planning and Deployment have miniscule emphasis when compared to other classifications
- Data Analysis has large emphasis in both years
- Collaboration has a noticeable decrease in point allocation

1996 Baldrige Criteria Summary

Insights to Excellence: An Inside Look at the Baldrige Award is a series of books that began in 1996 and were written by Mark Blazey. Later versions of the book were entitled *Insights to Performance Excellence: An Inside Look at the Baldrige Award*. The book series became heralded for its presentation and simplification of the Baldrige Award Criteria which separated it from other Baldrige Criteria documents. Of note are the effective practices to help clarify initiatives and linkages presented in the book to show correlations in the Criteria (Blazey, 1996). For the above reasons, this research utilizes these books going forward for analysis purposes.

The Malcolm Baldrige National Quality Award criteria and scoring guidelines have evolved to provide a powerful instrument for diagnosis that leaders can utilize to identify organizational strengths and key areas for betterment. Effective management systems are in no ways simple. They are comprised of complex relationships between management and labor, customers, and suppliers. The best organizations improve work processes constantly. They measure every key component of business activity and closely scrutinize organizational performance (Blazey, 1996).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 10 1996 Baldrige Criteria Supply Chain Initatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategy development	➢ Competitive comparisons & benchmarking • Supplier performance results	• Supplier requirements	• Senior executive leadership • Design and intro of products/services	• Supplier management improvement	• Strategy deployment

➢ This bullet represents the entrance of a new initiative

Table 11 SCOR Model 3.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Responsiveness and flexibility development • Integrated business and supply chain planning • Integrated demand and supply planning • Collaborative planning • Capacity and resource planning • Strategic and business plan alignment • Strategic sales and operations planning • Re-planning process	• Cross industry benchmarking process • Automated statistical process control • Standards and measurement alignment • Periodic review of metrics and strategy • ABC	• EDI resource integration	• Supply/demand process integration • Joint service agreements • EDI resource integration • Supply/demand plan chain visibility • VMI • Collaborative planning • Concurrent engineering • Supplier development programs • Supplier certification programs • ECR	• Reliable continuous improvement • Supplier development programs • Continuous improvement	• Integrated demand and supply planning • Strategic sales and operations planning

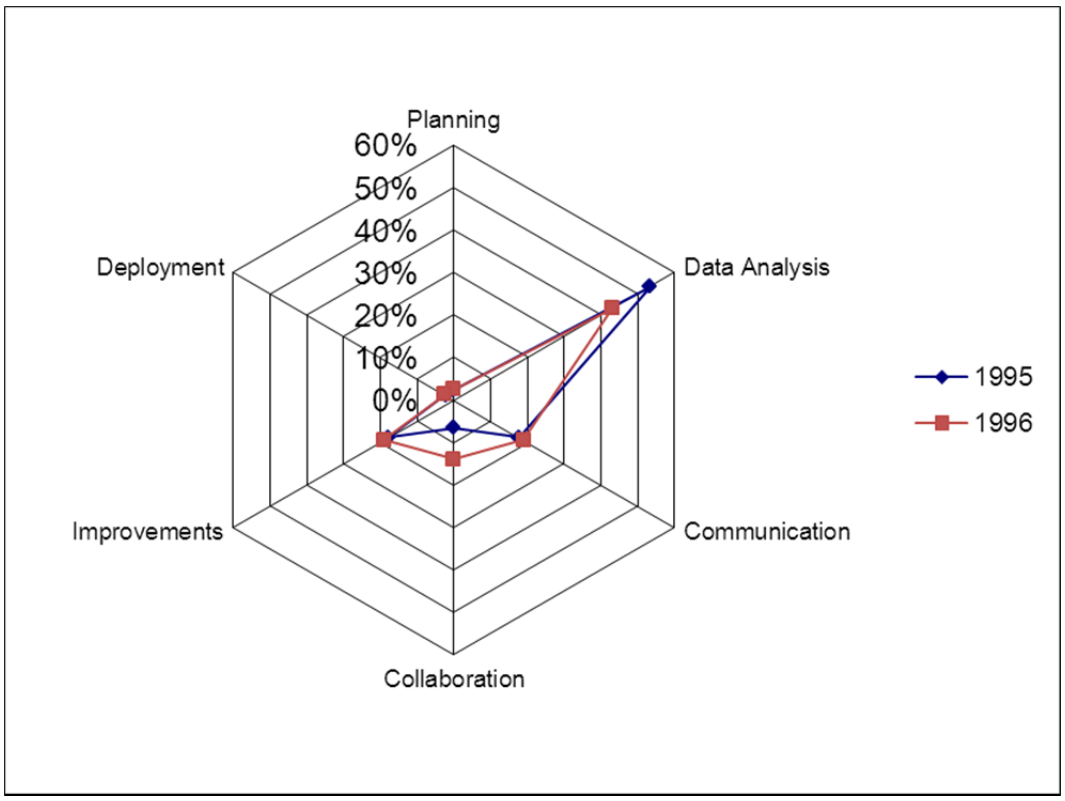

Figure 5 1995 vs 1996 Comparison of total scoring and classification scoring emphasis

Observations:

- Slight reduction in total points allocated to supply chain initiatives
- Data Analysis has decrease in emphasis
- Improvement has noticeable increase in emphasis
- Besides Improvement, years are similar but this isn't surprising since only a year has passed
- Represents Baldrige Criteria's official shift to Performance Excellence

1999 Baldrige Criteria Summary

A report "The Nation's CEO's Look to the Future" depicted the trends that CEO's saw as important in the near future. These trends are closely related to the categories within the 1999 Baldrige Criteria. Over 70 percent of the 308 CEO's from large, small, and non-corporate organizations reported the trends listed below as major considerations in the years following 1999. Many of these trends were strongly related to each other and the supply chain and will be considered each year during the revision phases of the Criteria (Blazey, 1999).

Globalization was identified as critical by 94 percent of the participants for every category but mainly Strategic Planning, where global competition and alliances had to be considered, as well as Customer and Market Focus, in which building and maintaining customer relationships was critical. Improving knowledge management was identified as critical by 88 percent of the participants. Knowledge acquisition management was perceived as an important competitive advantage. How information and analysis, as well as training, education, and sharing of best practices were managed was considered key to performance excellence (Blazey, 1999).

Cost and cycle time reduction was seen as critical to 79 percent of the participants. Process management was primarily affected by cost and cycle time. It was perceived that organizations that effectively managed key product and service design and delivery processes would enjoy a competitive advantage in the global market. Improving supply chains globally was viewed as critical to 78 percent of the participants. With business expanding to a global stage, supply chain management had to improve with direct suppliers and partners or further to partnerships and alliances. Manufacturing at

various locations in different countries was identified as critical by 76 percent of the participants. In order to foster success in manufacturing locations in different countries, a systems approach including the categories ranging from Strategic Planning to Process Management with a large focus on Customers and Markets as well as Human Resources was needed (Blazey, 1999).

Over 51 percent of the CEO's reported trends listed below as major (ranging from 69 percent to 52 percent). Trends keyed on by the CEO's are improving the execution of strategic plans as well as developing more appropriate strategic plans. Continuous measurement and analysis of organizational processes was also perceived as necessary. Also, developing a consistent global corporate culture, outsourcing of manufacturing, and creating a learning organization were considered important (Blazey, 1999).

As important as globalization was considered to the CEOs, only 18 percent rated U.S. competency as excellent. 70 percent rated it as fair. 23 percent rated the U.S. competency of knowledge management as excellent and 55 percent as fair. Competency in cost and cycle time reduction was rated as excellent by 31 percent and fair by 52 percent. The CEO's noted these gaps and the importance of utilizing solid management practices to reduce them to allow U.S. organizations to remain or become leaders in the global market (Blazey, 1999).

When asked what skills they and their peers most needed to improve on, over 50 percent cited the following as requiring substantial attention: the ability to think globally and execute strategies successfully, flexibility in a dynamic environment, ability to develop suitable strategies and rapidly redefine their business, and understanding of new technologies (Blazey, 1999).

40 to 50 percent of CEO's believed the need to improve their ability to work well with different stakeholders and create learning organization among others was of concern going forward.

As to which needed more improvement development or execution of strategies, execution was selected by almost a three to one margin. This meant alignment and realistic plans needed improvement as well as accountability. Having the organization pulling in different directions for individual priories would lead to the draining of energies and resources, flawed execution, and sub-optimized results. When asked about increasing market share versus expanding market size, market size was selected by over a four to one margin. Improved Leadership, Strategic Planning, and Customer and Market Focus were key here, especially in a global economy. Skill and diversity in the workforce, in addition to effectiveness of work processes, were also important (Blazey, 1999).

Changes from 1998 Baldrige Criteria

In 1999, the Criteria continued to evolve toward far-reaching coverage of strategy driven performance, attending to the needs of all stakeholders, including customers, employees, stockholders, suppliers, partners, and the public. The 1999 Criteria places a greater focus on the alignment of organization strategy, customer and market knowledge, a high performance workforce, key organization processes, and business results through an emphasis on aligning action plans throughout the organization. Organizational and employee learning are also given a larger emphasis (Blazey, 1999).

Snapshot Analysis: Baldrige Supply Chain Initiatives/Best Practices

Table 12 1999 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategy development	➢ Measurement of organizational performance ➢ Supplier and partner results	None	• Senior leadership direction ➢ Ethical practices ➢ Design processes ➢ Supplier and partnering processes	➢ Supplier and partnering processes	➢ Organizational performance review ➢ Action plan development and deployment ➢ Customer relationships

➢ This bullet represents the entrance of a new initiative

Table 13 SCOR Model 3.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
•Responsiveness and flexibility development •Integrated business and supply chain planning •Integrated demand and supply planning •Collaborative planning •Capacity and resource planning •Strategic and business plan alignment •Strategic sales and operations planning •Re-planning process	•Cross industry benchmarking process •Automated statistical process control •Standards and measurement alignment •Periodic review of metrics and strategy •ABC	•EDI resource integration	•Supply/demand process integration •Joint service agreements •EDI resource integration •Supply/demand plan chain visibility •VMI •Collaborative planning •Concurrent engineering •Supplier development programs •Supplier certification programs •ECR	•Reliable continuous improvement •Supplier development programs •Continuous improvement	•Integrated demand and supply planning •Strategic sales and operations planning

Observations:

- Nine new Baldrige Criteria initiatives
- Expansion of Collaboration and Deployment Baldrige initiatives
- Processes coming in as focal area in Baldrige Criteria

- Organization level initiatives involving measurement and review make entrance
- Action Plan and customer-focused initiatives enter Baldrige Criteria

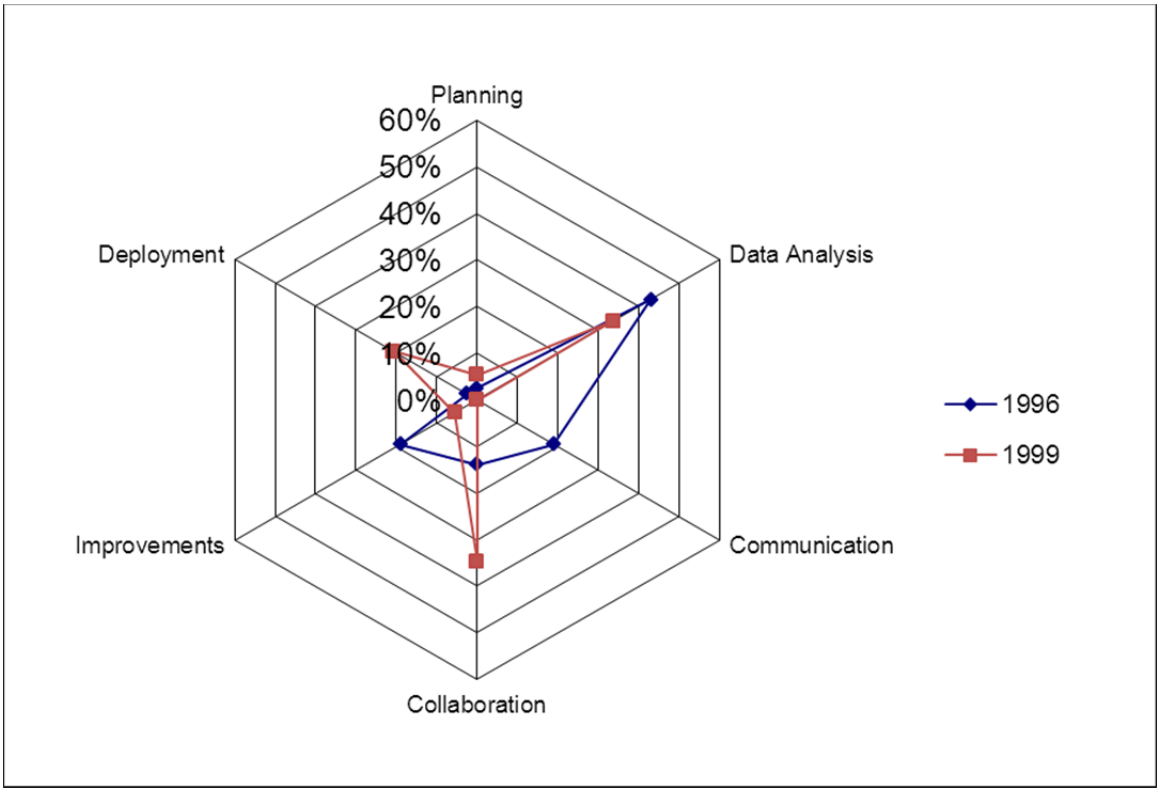

Figure 6 1996 vs 1999 Comparison of total scoring and classification scoring emphasis

Observations:

- Increase in points allocated to Supply Chain initiatives
- Noticeable increase in emphasis of Collaboration and Deployment
- Noticeable decrease in emphasis on Improvement

- Communication scoring falls out; may be explained by increase in Collaboration

2003 Baldrige Criteria Summary

The Criteria for Performance Excellence continue to evolve for the purpose of helping businesses deal with a dynamic environment by making strategy driven performance the focal point, placing emphasis on the needs of all stakeholders, and accommodating important changes in business needs and practices. The 2003 Criteria increases focus on governance and ethics, the need for the leveraging of knowledge assets, the need to create value for the customer and the business, and the alignment of all components of the organization's performance management system with results measurements. Two concepts led to the changes for this year. The first is a need of Criteria for "evidence-based management." The second is a need for a set of Criteria that emphasizes the twofold challenge of "running the business" and "changing the business" in order to achieve current and future business success as well as pursue opportunities for innovation (Blazey, 2003).

Organizational Profile Importance

The organizational profile is a general look at the organization, the main influences on how it operates, and the primary challenges it encounters. The organizational profile is the most important starting place for self-assessment in preparing for strategic planning. This is where the organization can locate gaps in key information and emphasize key performance requirements and business results. Examiners and judges utilize the organizational profile at each stage of review (Blazey, 2003).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 14 2003 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategy development	➢ Complaint management ➢ Organizational effectiveness results	➢ Senior leadership direction ➢ Accessibility of data and info ➢ Organizational knowledge	• Ethical behavior ➢ Value creation processes ➢ Support processes	None	• Organizational performance review • Action plan development and deployment • Customer relationships

➢ This bullet represents the entrance of a new initiative

Table 15 SCOR Model 6.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Responsiveness and flexibility development • Integrated demand and supply planning • Collaborative planning, forecasting, and replenishment • Capacity and resource planning • Strategic and business plan alignment • Strategic sales and operations planning • Re-planning process	• Cross industry benchmarking process • Automated statistical process control • Standards and measurement alignment • Periodic review of metrics and strategy • ABC ➢ Supplier performance data ➢ Comparative analysis ➢ Supplier selection ➢ Performance review process ➢ Assess supplier performance	• EDI resource integration ➢ Performance and business communication ➢ Supplier performance data	• Supply/demand process integration • Joint service agreements • EDI resource integration • Supply/demand plan chain visibility • VMI • Collaborative planning • Concurrent engineering • Supplier development programs • Supplier certification programs • ECR ➢ Supply chain partner collaboration extension ➢ Supplier selection ➢ Supplier(carrier) agreements ➢ Assess supplier performance	• Reliable continuous improvement • Supplier development programs • Continuous improvement and development	• Integrated demand and supply planning • Strategic sales and operations planning ➢ Supply chain partner collaboration extension

➢ This bullet represents the entrance of a new best practice

Observations:

- Seven new Baldrige Initiatives
- Twelve new SCOR Model Best Practices
- Complaint Management, another customer-focused initiative, comes into Baldrige Criteria
- Organizational focused initiatives continue to be prevalent in Baldrige Criteria
- New process-oriented initiatives enter Baldrige Criteria
- Communication makes a strong reentrance into the Baldrige Criteria
- SCOR Model Data Analysis and Collaboration are expanded substantially
- SCOR Model has a number of performance oriented best practices come in
- SCOR Model sees the entrance of Communication best practices

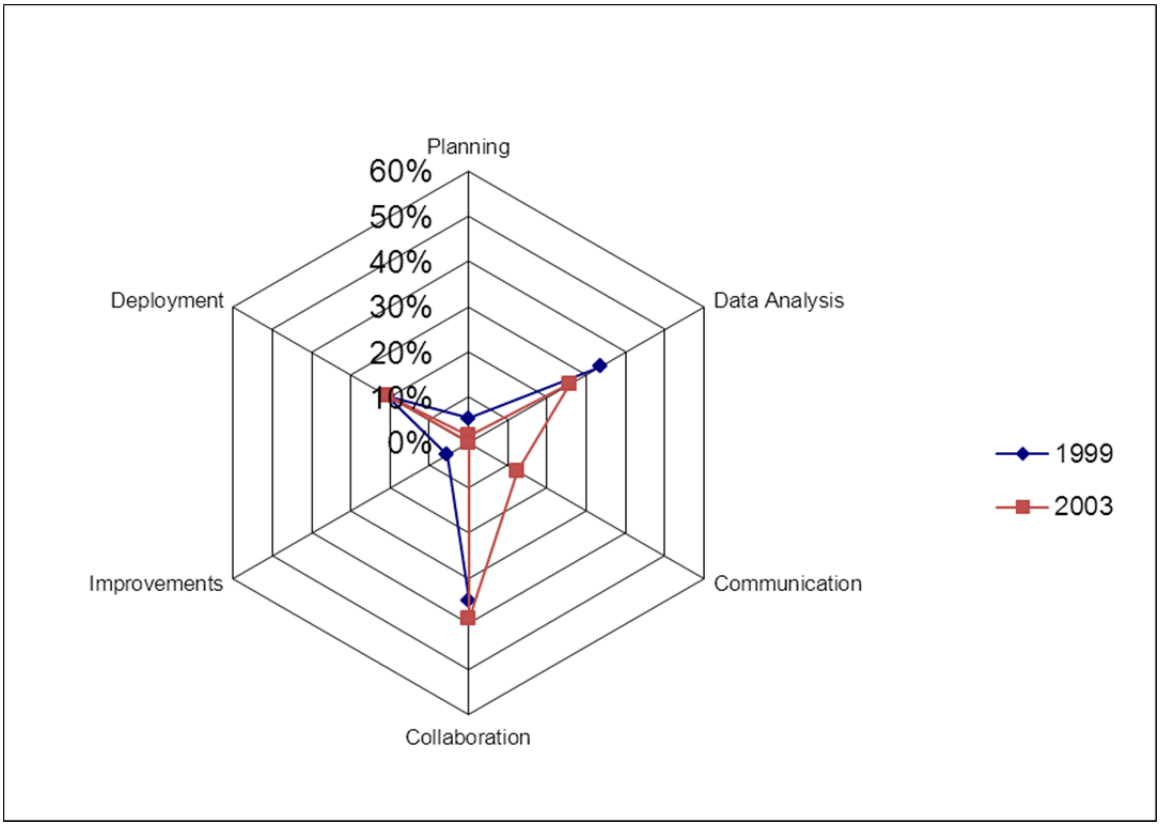

Figure 7 1999 vs 2003 Comparison of total scoring and classification scoring emphasis

Observations:

- Large increase in points allocated to supply chain
- Reentrance of Communication initiatives with substantial point allocation
- Improvement scoring exits the Criteria
- Shift down in emphasis of other initiatives except Collaboration and Deployment

2007 Baldrige Criteria Summary

Award Criteria Framework

Organizations must place themselves in a position so they can respond appropriately to their environment. Threats and weaknesses must be understood and managed while strengths and opportunities are exploited. Such factors guide strategy development, support operational decisions, and align measures and actions. In *Insights to Performance Excellence 2007*, Mr. Blazey breaks the Criteria down into elements- the Driver Triad, The Work Core, Brain Center, and Results/Outcomes (Blazey, 2007).

The Driver Triad is composed of Leadership, Strategic Planning, and Customer Focus. Leaders use these processes to set goals and directions, track progress, make decisions, and make corrective adjustments when needed. The Work Core consists of Workforce Focus and Process Management. For peak performance to be attained, people must be equipped with the necessary skills and function in an environment that promotes initiative and self-direction. The work processes provide the structure for continuous learning and improvement to optimize performance. Results depict the organization's performance and give the leaders a basis to monitor progress against goals. The Brain Center is Measurement, Analysis, and Knowledge Management. It provides data and analyses to support decision making at every level. These processes capture, store, analyze, and retrieve information and data that is vital for effective management to occur. Rapid access is necessary for the enhancement of decision making in the complex, global environment. All of these elements are supported by core values and concepts (Blazey, 2007).

The Criteria support a systems approach to the maintenance of organization-wide goal alignment. This is inherent in the integrated structure of the Core Values and Concepts, the Criteria, the Scoring Guidelines, and the results oriented, cause-effect linkages between Criteria parts. Alignment within the Criteria is constructed around joining and reinforcing measures that have been derived from the organization's processes and strategy. Criteria measures are linked to customer and stakeholder value as well as overall performance related to key internal and external requirements. Measures hold a two-fold role as a communication mechanism and a basis for deployment of consistent performance requirements. Alignment leads to consistency of purpose in addition to support for speed, innovation, and decentralized decision making (Blazey, 2007).

Changes from 2006 Baldrige Criteria

The Baldrige Criteria for Performance Excellence continue to evolve to remain relevant in the dynamic environment that organizations and senior leaders compete within. The Baldrige Criteria changes with the intent of asking the right questions to lead decision making and attend to the vital links between organizational structure, operations, strategy, and results. The most noteworthy revisions reside in four areas of increasing importance: strategic advantages and core competencies; innovation; work systems for producing business results; and workforce engagement, workforce capability, and workforce capacity. Criteria questions have been further aligned across the seven categories and with the organizational profile. The objectives of these changes are to improve self-assessment and external assessment, the identification of organizational

strengths and gaps and alignment of key processes, and the identification of the organization's level of performance, and opportunities in results areas (Blazey, 2007).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 16 2007 Baldrige Criteria Supply Chain Initiatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategy development process ➢ Strategic objectives	• Complaint management ➢ Process effectiveness outcomes	➢ Communication and organizational performance • Accessibility of data and information • Organizational knowledge management	➢ Senior leadership vision and values • Legal and ethical behavior ➢ Work process design ➢ Work process management	None	• Action plan development and deployment • Customer relationships • Organizational performance review

➢ This bullet represents the entrance of a new initiative

Table 17 SCOR Model 9.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Responsiveness and flexibility development • Integrated demand and supply planning • Collaborative planning, forecasting, and replenishment • Capacity and resource planning • Strategic and business plan alignment • Strategic sales and operations planning • Re-planning process	• Cross industry benchmarking process • Automated statistical process control • Standards and measurement alignment • Periodic review of metrics and strategy • ABC • Supplier performance data • Comparative analysis • Supplier selection • Performance review process • Supplier performance assessment system	• EDI resource integration • Performance and business communication • Supplier performance data	• Supply/demand process integration • Joint service agreements • EDI resource integration • Supply/demand plan chain visibility • VMI • Collaborative planning • Concurrent engineering • Supplier development programs • Supplier certification programs • ECR • Supply chain partner collaboration extension • Supplier selection • Supplier(carrier) agreements ➢ Develop supplier partnerships ➢ Supplier performance assessment system ➢ Postponement ➢ Outsource non-core competencies	• Reliable continuous improvement • Supplier development programs • Continuous improvement and development ➢ Optimized supply chain processes	• Integrated demand and supply planning • Strategic sales and operations planning • Supply chain partner collaboration extension

➢ This bullet represents the entrance of a new best practice

Observations:

- Five new Baldrige initiatives
- Five new SCOR best practices
- First notable addition to Baldrige Criteria Planning since 1996 shift to Performance Excellence

- Process-oriented initiatives remain present and take another form in the Criteria
- SCOR Model sees another expansion in Collaboration
- Supply/demand process integration and supply chain optimization in SCOR appear to be goals for work process design and work process management from the Baldrige Criteria

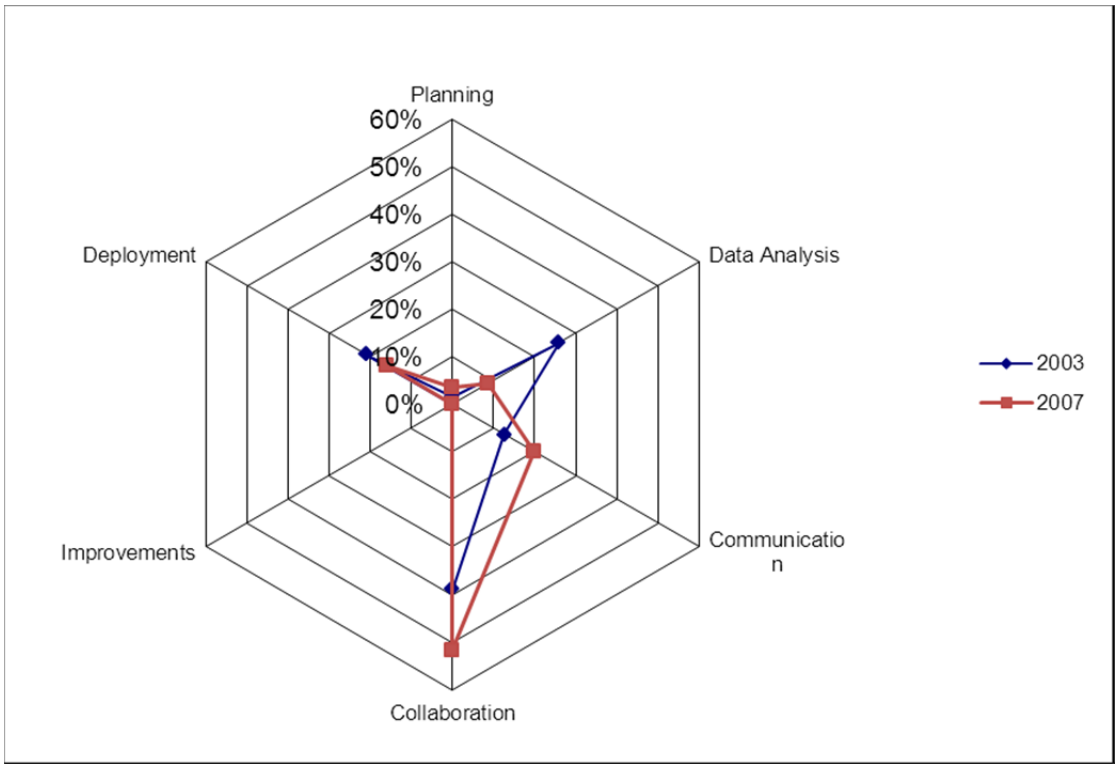

Figure 8 2003 vs 2007 Comparison of total scoring and classification scoring emphasis

Observations:

- Decrease in points allocated to supply chain
- In spite of new Planning initiative, no noticeable increase in emphasis
- Noticeable decrease in Data Analysis emphasis
- Increase in Communication and Collaboration emphasis
- Improvement absent

2009-2010 Baldrige Criteria Summary

The Criteria for Performance Excellence continue to evolve to aid senior leaders and their organizations to compete in a constantly changing environment, emphasize strategy driven performance, ensure good governance and ethics, and make key decisions that encourage short-term success and long-term organizational sustainability. The 2008 Criteria had minimum revisions, following significant revisions in 2007. Core competencies were introduced as a key concept in 2007. However, their strategic importance was not entirely leveraged. The primary concentration of revisions in the 2009-2010 Criteria is on customer focus, organizational core competencies, and sustainability and societal responsibilities (Blazey, 2009).

Changes over the 20 years of the Baldrige program have been revolutionary. It has progressed from a specific focus on manufacturing quality to a comprehensive strategic focus on overall organizational competitiveness and sustainability. The decisions each year to revise the Criteria had to take two important factors into consideration: (1) a need for Criteria that are at the leading edge of validated management practice to help users address the increasingly complex challenges and (2) a desire for the

Criteria to remain stable so users have continuity in their performance assessments. To balance stakeholder needs, the program began in 2009 to have a two year revision cycle (Blazey, 2009).

It is imperative that the organization get feedback from the customers after they have been recipients of its goods or services. For value to be consistently produced, organizations must accurately ascertain customer requirements and at worst, meet those requirements, if not exceed expectations. The initial value chain comes from this premise and provides the competitive advantage for the organization (Blazey, 2009-2010).

While workers who are motivated, skilled, and knowledgeable are important for optimum performance and value, they will always fail if the process itself is not optimized. Every process has the potential for increasing or reducing value provided to customers. Though key work processes are most important, core processes can also suffer due to failed support processes or supplier failure. In-process measures are important here. Data and information must be made available to allow for the best possible decisions. Problems can be addressed quicker and easier and actions can be taken for improvement. For data to be effective for the support of decision making, organizations must develop a system to manage, collect, analyze, and display the results. Finally, leaders set the direction for an organization. They must comprehend customer requirements and the market to make appropriate decisions regarding this direction (Blazey, 2009).

In addition, organization capabilities as well as the capabilities of the workforce, partners, and suppliers should be understood. Strategy is instrumental in aiding leaders in setting the organization's direction. Strategic objectives define what the organization

must strive to achieve. People and processes must then be identified and put into proper place to arrive at desired outcomes. Finally, communication with the workforce, suppliers, partners, and customers is necessary. Clarity is important here because workers need to work toward a common goal and pull in the same direction. The processes must be integrated and used to manage work (Blazey, 2009).

Snapshot Analysis: Baldrige Supply Chain Initiatives/SCOR Best Practices

Table 18 2009-2010 Baldrige Criteria Supply Chain Initatives

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Strategy development process • Strategic objectives	➢ Measurements of customer satisfaction • Complaint management • Process effectiveness outcomes	➢ Senior leadership vision and values • Accessibility of data • Organizational knowledge management	• Legal and ethical behavior ➢ Key work processes ➢ Work systems design	None	• Action plan development and deployment ➢ Performance improvement

➢ This bullet represents the entrance of a new initiative

Table 19 SCOR Model 10.0 Supply Chain Best Practices

Planning	Data Analysis	Communication	Collaboration	Improvement	Deployment
• Responsiveness and flexibility development • Integrated demand and supply planning • Collaborative planning, forecasting, and replenishment • Capacity and resource planning • Strategic and business plan alignment • Strategic sales and operations planning • Re-planning process ➢ Supply chain advance planning system ➢ Strategy team collaboration	• Cross industry benchmarking process • Automated statistical process control • Standards and measurement alignment • Periodic review of metrics and strategy • ABC • Supplier performance data • Comparative analysis • Supplier selection • Performance review process • Supplier performance assessment system	• EDI resource integration • Performance and business communication • Supplier performance data	• Supply/demand process integration • Joint service agreements • EDI resource integration • Supply/demand plan chain visibility • VMI • Collaborative planning • Concurrent engineering • Supplier development programs • Supplier certification programs • ECR • Supply chain partner collaboration extension • Supplier selection • Supplier(carrier) agreements • Develop supplier partnerships • Supplier performance assessment system • Postponement • Outsource non-core competencies ➢ Strategy team collaboration	• Reliable continuous improvement • Supplier development programs • Continuous improvement and development • Optimized supply chain processes	• Integrated demand and supply planning • Strategic sales and operations planning • Supply chain partner collaboration extension

➢ This bullet represents the entrance of a new best practice

Observations:

- Five new Baldrige initiatives
- Three new SCOR best practices
- Another entrance of customer-focused initiative in Data Analysis with exit of customer-focused initiative from Deployment
- Baldrige Criteria supply chain initiatives shift, come in, and fall out and are typically replaced with new initiatives that may expand or shift the focus of the initiative, possibly sending it to a new classification
- Exception appears to be Improvement which appears to have no initiatives during the last researched year; hopefully, this is addressed in the more in-depth classification analysis
- SCOR Model Best Practices tend to increase and change slightly
- SCOR consistently places substantial emphasis on Planning, Data Analysis, and Collaboration

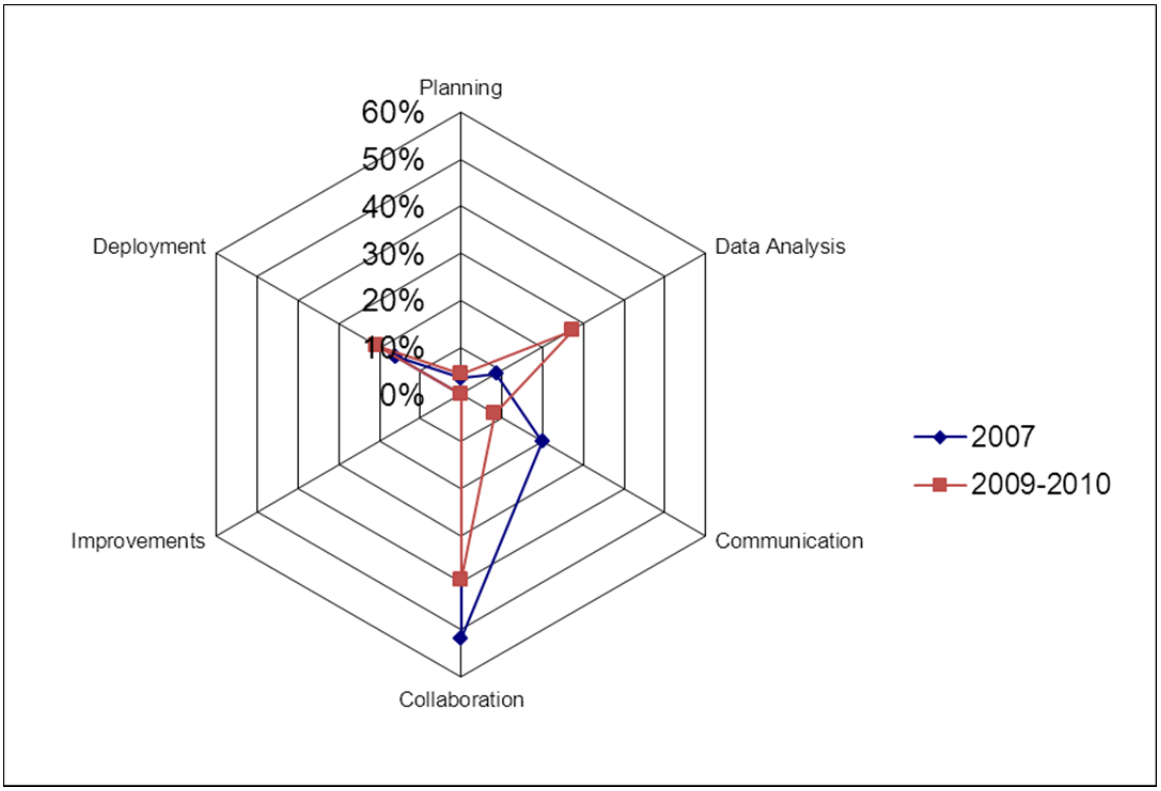

Figure 9 2007 vs 2009-2010 Comparison of total scoring and classification scoring emphasis

Observations:

- Significant drop in points allocated to supply chain
- Increase in emphasis on Deployment and Data Analysis
- Decrease in emphasis on Communication and Collaboration
- Highest emphasis on Collaboration and Deployment
- Improvement absent

Snapshot Analysis Trends

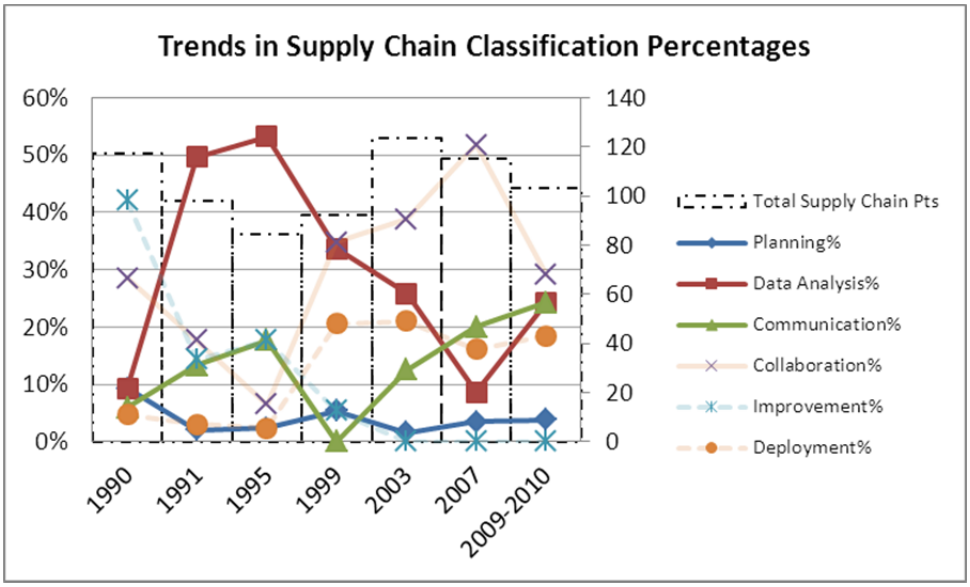

Figure 10 Trends in Supply Chain Classification Emphasis and Supply Chain Points

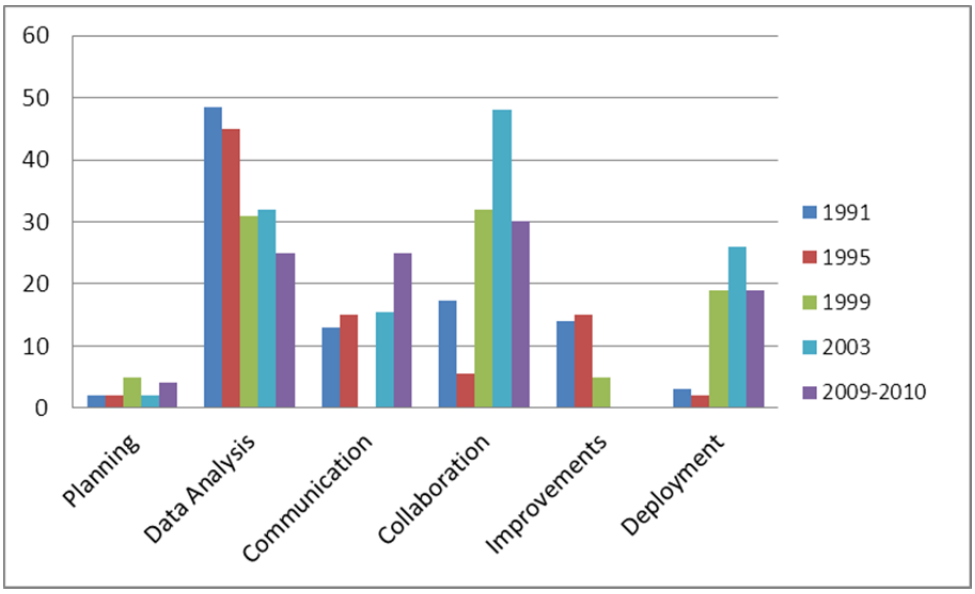

Figure 11 Trends in Supply Chain Classification Point Totals

Snapshot Analysis Summary

The Baldrige Criteria began in 1988 and has its early years characterized by the total quality management movement. The Baldrige Criteria predates the SCOR Model by eight years. The Supply Chain Council created the SCOR model in 1996 which coincides with the Baldrige Criteria's shift from the quality movement to performance excellence. In fact the Baldrige Criteria began this shift in 1995 as can be seen from the snapshot of this year. Kurt Salmon Associates research is responsible for contributing efficient consumer response, electronic data interchange, and activity based costing as best practices that are included when the SCOR Model is conceived. Given the general nature of Baldrige Criteria initiatives, it is not entirely clear what best practices from Kurt Salmon Associates are a part of the Criteria. Some noticeable areas of commonalities between the Baldrige Criteria and the SCOR model even during the Criteria's quality era are the consistent focus within Data Analysis on benchmarking. When the quality era came to an end and quality was essentially removed as the sole focus from the Baldrige Criteria, there was a large reduction in supply chain initiatives. This was likely a part of the Baldrige Criteria's refocusing years on performance excellence. Both documents show a strong emphasis on Collaboration, the SCOR model through number of best practices, the Baldrige Criteria through scoring. The SCOR Model consistently places a strong emphasis on Planning; however the Criteria consistently places limited focus on Planning. This is attributed to the strong correlation planning has with other categories and thus other classifications. In addition, the Criteria over time becomes less prescriptive, beginning with a focus on approach and shifting more to a results-oriented

focus during the performance excellence era to allow for varying approaches. Within the Criteria, Deployment began in the early years with limited emphasis as well.

The Baldrige Criteria routinely pushes the importance of leadership or executive involvement with suppliers and partners. By 1999, ethics and values are routinely heralded as necessary considerations for dissemination to suppliers and partners. These appear to be the sole instances in which the Baldrige Criteria outperforms the SCOR model given there appear to be no SCOR best practices that address these initiatives. Also, the process-oriented initiatives become common in the Baldrige Criteria. The Criteria has an expansion within Collaboration and Deployment at this time and an influx of supply chain initiatives. There is a noticeable increase in supply chain points this year as well. By 2003, both the Baldrige Criteria and SCOR Model see an uptick in items. Baldrige Criteria continues its attempt to include customer-focused initiatives. Organizational-level initiatives are becoming noticeable in the Criteria as well. Coinciding with the new initiatives is the substantial increase in supply chain points. Communication reentrance also helps explain the large amount of points. The SCOR model has growth in Data Analysis and Collaboration through an increase in performance oriented best practices. Improvement is noticeably absent from latter years of the Baldrige Criteria.

The Baldrige Criteria maintains a certain set of supply chain initiatives that change over time and enter the Criteria and fall out and even shift between classifications as the Criteria changes. The SCOR model, by comparison, appears to build an archive of best practices that can be used to further validate the ever-changing supply chain initiatives in the Baldrige Criteria. The Baldrige Criteria in its most recent years has its

emphasis primarily in Collaboration, Deployment, and Data Analysis. Like the Baldrige Criteria, the SCOR model places its emphasis in Collaboration and Data Analysis. However, it places a great deal of emphasis in Planning as well, while the Criteria never places meaningful emphasis directly on this classification. Best practices can be found repeated in different classifications for the SCOR model, which likely shows the relation among the classifications. A lot has been learned from the snapshot analysis; however questions abound, such as the Criteria's lack of emphasis on Planning and the differences from SCOR. The Baldrige Criteria does not have nearly the number of supply chain items as the SCOR model. The classification analysis will help answer questions created or left unanswered by the snapshot analysis used to gain some preliminary insights into the Baldrige Criteria as a source of supply chain best practices.

CHAPTER V

BALDRIGE CRITERIA ANALYSIS PART 2

Supply Chain Classification Analysis

For thorough analysis of the Baldrige Criteria supply chain initiatives, it is necessary to examine each initiative within each classification. Descriptions of the supply chain initiatives, namely what they entail, will aid in this analysis for the purpose of observing trends in these initiatives and classifications. Any accompanying indicators, effective practices, and/or linkages are also given along with the initiative. Each classification's supply chain initiatives are presented chronologically for each pertinent year. This information will help guide this research toward its goal of determining the Baldrige Criteria's validity as a model for industry supply chain best practices. All supply chain initiatives found in the Baldrige Criteria are in *italics*. Generally, repeated initiatives will be listed in their respective years without the explanations being repeated. The SCOR best practices have been extracted, classified, and described in the same manner as the Baldrige initiatives. SCOR best practices are analyzed by classification along with the Baldrige initiatives for comparative analysis. The SCOR model best practices used for analysis of supply chain initiatives will be in *underlined italics*. Any other items taken from the SCOR model for analysis, namely processes and inputs, are underlined.

Planning Supply Chain Initiatives

1991 Baldrige Criteria Planning

Strategic quality planning process looks mainly at the inputs needed for carrying out this process. For the purpose of this research, data concerning supplier capabilities are most pertinent especially if the organization is highly dependent on its supplier(s) for its goods and services. How supplier data is obtained and used for the development of goals or plans is also required.

Indicators

- Extent to which supplier data is used as an input to the planning process. (Graham, 1991)

1995 Baldrige Criteria Planning

Strategic Planning addresses the area of strategic business planning. Before this year, it was called Strategic Quality Planning. The removal of the word "quality" was done to eliminate the perception that quality planning was independent of overall business planning. The focus is now defined as being on short- and longer-term business plans. Though its point value is low when compared to other categories, other section point values are dependent on this section. This is a recurring theme yearly in the Baldrige Criteria due to the various areas of the Criteria with which Strategic Planning is connected.

Strategy development is concerned with the types of data that are collected and used to determine future direction and formulate specific business plans. The primary question in this area was how different sources of data are converted into long- and short-term goals and strategies. Analyzing supplier capabilities is also important in plan

development especially when performance is strongly predicated on the suppliers. The methods for using supplier data to develop goals and/or strategies are desired here.

Indicators:

- Extent of use of supplier data as an input for the planning process.(Graham, 1995)

1996 Baldrige Criteria Planning

Strategy development is concerned with how the company develops its vision of the future, sets strategic direction, and translates this direction into actionable key business drivers, including customer satisfaction and market leadership requirements. This initiative entails information on the key influences, challenges, and requirements that affect the company's future opportunities and directions. The primary purpose of this area is to develop a thorough and realistic context for the development of a customer and market-focused strategy to guide ongoing decision making, resource allocation, and companywide management. *Strategy development* also requires information on how strategy and plans are translated into actionable key business drivers, which serve as the basis for operationalizing and deploying plan requirements. Such translation may involve a determination of activities the company should perform on its own and those for which it needs assistance from partners.

Links:

- Organization performance and supplier quality results are used in the planning process to set priorities and goals.

Effective Practices

- Data on customer requirements, key markets, benchmarks, and supplier capabilities are used to develop business plans.

(Blazey, 1996)

1999 Baldrige Criteria Planning

In the Baldrige Criteria, strategic planning is composed of the planning process, the identification of goals and activities needed for success, and the deployment of such actions to align the work of the organization. In looking at strategy development as it relates to the supplier, supplier capabilities and needs are of importance (Blazey, 1999).

Strategy development process is focused on competitive leadership which generally is dependent upon revenue growth and operational effectiveness. A view of the future including markets or segment in which the organization competes as well as how it competes is needed. An understanding of strengths and weaknesses of the organization and its competitors is necessary. This item's purpose is to give a complete and realistic context for the development of a customer and market-focused strategy to steer continuous decision making.

Links:

- Supplier and partner results are used in the planning process to set priorities and goals.

Effective Practices

- Data on customer requirements, key markets, benchmarks, supplier and partner, human resource, and internal and external organizational capabilities are utilized for the development of business plans. (Blazey, 1999)

2003 Baldrige Criteria Planning

Strategy development process is concerned with the approach taken by the organization to prepare for the future, namely the establishment of strategic objectives, including enhancement of competitive position and overall performance. Though this initiative applies to many aspects of the organization, the concern here is the process of attaining and analyzing relevant data to address partner and supply chain needs, strengths, and weaknesses.

Effective Practices:

- Data on customer requirements, key markets, benchmarks, supplier and partner, human resources, and organizational capabilities(internal and external) are used to develop business plans. (Blazey, 2003)

2007 Baldrige Criteria Planning

Strategy development process is concerned with the manner in which the organization defines strategic challenges and advantages and develops measurable, outcome-focused *strategic objectives*, with the goal of improving overall performance, competiveness, and future success. The item is concerned with the description of its strategic planning process and identification of key participants, key steps, and planning

time horizons. Such participants may include key suppliers, distributors, partners, and customers.

To do so, these *strategic objectives* must be created in such a way that they balance the needs of all key stake holders. In addition to a summary of the strategic objectives, a timetable is needed for carrying them out. The method used by these objectives to attend to core competencies, challenges, and advantages outlined in the Organizational Profile is also required (Blazey, 2007).

2009-2010 Baldrige Criteria Planning

Strategic development process is concerned with the manner in which the organization determines core competencies, strategic challenges, and comes up with measurable, results-oriented strategic objectives to improve overall performance, competitiveness, and future success. The item is concerned with the description of its strategic planning process and identification of key participants, key steps, and planning time horizons. Such participants may include key suppliers, distributors, partners, and customers.

To do so, these *strategic objectives* must be created in such a way that they balance the needs of all key stake holders. In addition to a summary of the strategic objectives, a timetable is needed for carrying them out. The method used by these objectives to attend to core competencies, challenges, and advantages outlined in the Organizational Profile is also required.

Strategy is a term that is to be interpreted "broadly" and should include all factors that are vital to the organization's future success including endeavors directed toward partner and supply chain needs, strengths, and weaknesses. Strategic planning aids in

providing a basis for aligning the organization's work processes with strategic directions to keep people and processes from working against each other.

Important considerations follow:

- Determining strengths, weaknesses, opportunities, threats, in addition to its ability to execute its strategy.
- Understanding key customer, market, and operational requirements necessary for setting strategic directions
- Ability to optimize the use of resources, ensure a trained workforce is available, supplier development, new partnerships or collaborations, and other factors of organizational success
- A couple of supplier related considerations for strategy development are supplier and supply chain capabilities and needs.

(Blazey, 2009)

Baldrige Criteria Planning validation through SCOR

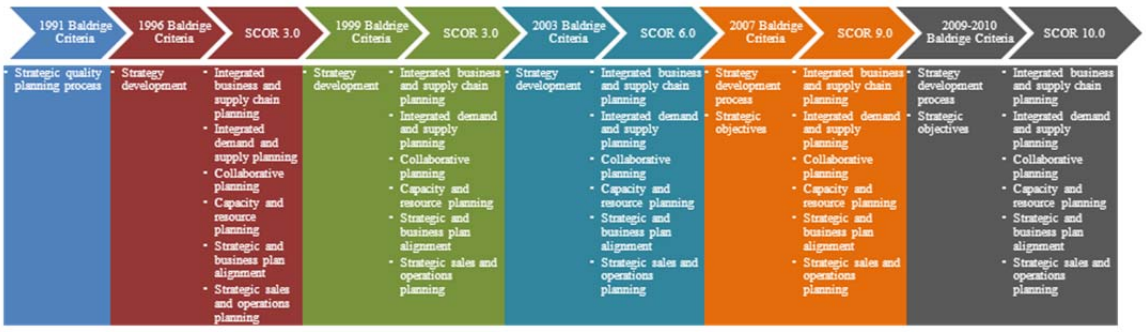

Figure 12 Illustrating the progression of Planning supply chain initiatives and SCOR best practices

The SCOR Model tends to take a very different approach to Planning than the Baldrige Criteria. As stated in the 1995 Baldrige Criteria, Strategic Planning receives limited emphasis throughout the Criteria due to its correlation to other categories in the Baldrige Criteria. The SCOR model tends to place a great deal of emphasis on the intricacies of the planning process through the inclusion of a substantial number of Planning focused supply chain best practices. However, there is still the likelihood that Baldrige Criteria Planning classification initiatives can be validated through the SCOR model.

The early years of the Malcolm Baldrige Criteria within the context of the Planning classification were primarily concerned with supplier inputs to the planning process. Supplier capabilities were the most important consideration for this initiative. As the Criteria shifted to performance excellence, *strategy development* became a consistent planning initiative going forward that was concerned with the types of data collected. In looking at this portion of this initiative in the context of the SCOR model, some actual examples of input or types of data for collection are given as best practices. *Collaborative planning* is a best practice in the SCOR model that takes planning information such as POS(point of sale) information, demand history, forecast, and production schedules and shares it with suppliers, manufacturers, and customers for planning purposes. The next part of *strategy development* is the use of the collected data for the determination of future direction and formulation of specific business plans, or in future Criteria actionable key business drivers. The question at the core of this initiative is the conversion into long-term and short-term goals and strategies through the analysis of supplier capabilities. Future Criteria delve deeper by giving the purpose as a

foundation for the development of a customer and market-focused strategy to facilitate decision making, resource allocation, and companywide management. Addressing partner and supply chain needs, strengths, and weaknesses became of great concern as well. *Strategic objectives* require that stakeholder needs be balanced as a part of the outcomes for *strategy development*. These goals tie in to a few Planning best practices within the SCOR model. *Integrated business and supply chain planning* looks at the integration of business and supply chain planning by leveraging cross functional input to create business rules. *Integrated demand and supply planning* links demand planning, supply planning, and particularly supply plan execution. This planning and execution data is integrated and shared with all functional areas in an organization. *Sales and operations planning* is a process for developing tactical plans that allow management the aptitude to strategically direct its businesses to achieve a consistent competitive advantage through the integration of customer-focused marketing plans for new and existing products with the management of the supply chain. This best practice brings all business plans together including sales, marketing, development, manufacturing, sourcing, and financial. Finally, *Strategic and business plan alignment* with long-term capacity and resource planning is yet another Planning best practice that ties into Baldrige planning initiatives (Supply Chain Council, 2010). The Baldrige Criteria Planning initiatives, though related to SCOR best practices, are much too general to encompass the breadth of SCOR Planning best practices presented. However, their connection with initiatives within other classifications may provide the material needed to properly address these best practices.

Data Analysis Supply Chain Initiatives

1991 Baldrige Criteria Data Analysis

Scope and management of quality data and information looks at the systematic process for identifying the indices an organization uses to measure and manage quality. An organization should have a particular set of standards utilized for the selection of variables to measure and include in their quality data base. Importance to the customer as well as impact on other important variables must be a part of such standards. Objectivity of the data collection is yet another consideration. This research is concerned with this information relative to supplier quality.

Indicators

- Extent to which data on the quality of goods and services from suppliers is collected

Competitive benchmarking is concerned with all comparative benchmarking data relative to supplier quality. Along with supplier quality results, comparative data from outside sources, namely competitors and other potential benchmarks, are required.

Indicators:

- Extent to which competitor and benchmark data are collected on supplier performance

Quality trends looks at data that shows that suppliers have improved over time. Supportive data such as graphs and statistics are vital for this initiative.

Indicators:

- Percentage of suppliers for which comparative data given
- Importance of suppliers for which comparative data given
- Benchmarking data on suppliers

Benchmarking supplier quality results is concerned with a comparison between an organization's suppliers' quality with competitors' supplier quality. The bases for comparison must be established first. Questions of importance include: How are competitors, suppliers, and benchmark organizations selected. Again, data such as graphs are imperative for this initiative.

Indicators:

- Percentage of suppliers for which comparative data given
- Importance of suppliers for which comparative data given
- Benchmarking data on suppliers

(Graham, 1991)

1995 Baldrige Criteria Data Analysis

Supplier performance results are data that depict the key measures of supplier performance. Obviously, it is desired that evidence be presented that shows improvements in supplier performance over years as a result of the company's effort.

Explanations of lacking results and a comparison of company supplier performance to competitor suppliers and/or benchmark organizations are also needed for thorough addressing of this initiative. An explanation of how this data is used for supplier selection is also desired. Graphs and tables must be included to validate all explanation and should include all appropriate comparative data (Graham, 1995).

1996 Baldrige Criteria Data Analysis

Competitive comparisons and benchmarking is concerned with external drivers of improvement, namely data and information related to competitive position and best practices. Data may have both operational and strategic implications. Sources may include information from customers or suppliers. The motivations for this initiative are a company's need to know their position in relation to competitors and best practice performance for similar activities, the potential for breakthrough improvement and awareness of competitive threats and new practices, and a company's need to understand their own processes and the processes of others before performance comparison can be carried out. Benchmarking information has the potential to support business analysis and decisions relative to core competencies, alliances, and outsourcing.

Links:

- Benchmarking and comparison data can be utilized to improve data collection, benchmarking, data analysis, and leadership effectiveness to encourage breakthrough improvements in supplier performance for planning and the setting of objectives and goals.

Effective practice:

- Benchmarking encompasses key products, services, customer satisfiers, suppliers, and support operations.

Supplier performance results attend to current levels and trends in key measures or indicators of supplier performance. The emphasis must be on the most critical requirements from the company's viewpoint. Data given must show results however they occur, whether by improvements within the present supply base, by selection of higher performing suppliers, or both. Measures and indicators of performance should account for all key requirements: quality, delivery, and price. Comparative information is also needed so that results given can be examined against competitors and or other important external measures of performance.

Links:

- Supplier performance results data are collected and utilized to provide feedback to suppliers and organizational managers and to help set priorities related to supplier performance.
- Supplier performance results are utilized to determine supplier capabilities during strategy development (planning) process.
- Supplier capabilities are considered in the design process to help determine overall process capability of the organization to deliver products and services to meet customer requirements.
- Processes to improve supplier quality affect supplier quality results.

Effective Practices:

- Results are presented by key suppliers or supplier types as appropriate. Data are presented through the use of the measure and indicators of supplier performance.
- If organization's supplier management efforts include factors such as fostering supplier partnerships or reducing number of suppliers, data related to these endeavors are included as a part of the response.
- Supplier performance measures include defect rate, on-time delivery, and number of suppliers that meet certification standards.
- Data is presented by meaningful supplier categories to show consistent improvement in each category.

(Blazey, 1996)

1999 Baldrige Criteria Data Analysis

Measurement of organizational performance analyzes the main components of an effective performance measurement system. It looks at the selection and use of measures and indicators for tracking daily operations and those for tracking overall organizational performance. Alignment and integration of measures are perceived along the extent and effectiveness of use to meet organizational needs. Data and information reliability is a key aspect for monitoring operations and for data integration to find organizational performance. Performance information and data could be particularly beneficial in

business networks, alliances, and supply chains. Responses to this item must include strategic use of performance information and data.

The motivations for utilizing comparative information are organizations' need to know their position relative to competitors and best practices, comparative and benchmarking information typically serve as the stimulus for significant improvement or changes and can make the organization aware of competitive threats and new practices, and organizations must understand their own processes and the processes of others for comparison. Benchmarking potentially can support business analysis and decisions relative to core competencies, alliances, and outsourcing.

Effective Practices

- Supplier performance data are maintained.
- Employees, customers, and suppliers are involved in validating data.
- Benchmarking covers key products, services, suppliers, employees, and support operations.

Supplier and partner results are concerned with current levels and trends in key measures as well as indicators of supplier and partner performance. In addition, the performance of supplier management process(for example cost reductions) are also considered. The data involved should present results according to the way they occur through improvements by suppliers and partners and/or by the selection of suppliers and partners that perform at higher levels. Measures and indicators should consider the key factors that concern the organization's purchases such as quality, delivery, and price.

The data presented should show the method suppliers and partners utilized to contribute to the organization's performance goals. Cost savings such as reductions in scrap, waste, or rework and cycle time or productivity enhancements should be reported. Comparative information is needed so that the results can be analyzed against competitors or other meaningful external gauges of performance.

Links:

- Supplier and partner performance results data are collected and used to provide feedback to organizational managers for analysis.
- Supplier and partner performance results are used to determine supplier capabilities during the strategic planning process.
- Processes to improve supplier and partner capability affect supplier and partner results.

(Blazey, 1999)

2003 Baldrige Criteria Data Analysis

Complaint management is an important part of customer relationships that involves capturing, aggregating, analyzing, and learning from complaint information by employees in the organization as well as partners in the supply chain (prompt and courteous complaint resolution for recovery of customer confidence).

Organizational effectiveness results are a subset of Business Results. Business Results represent a balanced scorecard of organizational performance that gives "real time" information (progress measures) for evaluation and improvement of processes, products, and services, aligned with the organizational strategy as a whole. Financial results are considered a "lagging" indicator of business success. They are the sum of all

the good and bad processes, dissatisfied and satisfied customers, as well as effective and ineffective suppliers for some examples. Once these have occurred, it may be too late to react timely and appropriately. Customer satisfaction is another "lagging" indicator since the customer has already experienced the product. Leading indicators aid organizations in predicting customer satisfaction and financial performance. Supplier and partner performance is a "leading" indicator because it influences an organization's operating performance which is also a "leading" indicator of customer satisfaction and financial performance.

Organizational effectiveness results deal with the organization's key operational performance results in both value creation and support processes in addition to the achievement of key goals and strategic objectives. Included here are supply chain indicators such as reductions in inventory and incoming inspections, increases in quality and productivity, improvements in electronic data interchange, and reductions in supply chain management costs (Blazey, 2003).

2007 Baldrige Criteria Data Analysis

Process effectiveness outcomes focuses on the organization's key operational performance results to show organizational effectiveness in key work processes. This initiative encourages the organization to develop and include unique and innovative measures to track organizational development, key processes, and operational improvement. All pertinent areas of organizational and operational performance must be covered by measures that are relevant to the organization. Measures can include supply chain indicators that may include reductions in inventory and incoming inspections,

increases in quality and productivity, improvements in electronic data exchange, and reductions in supply chain management costs (Blazey, 2007).

2009-2010 Baldrige Criteria Data Analysis

Measurement of customer satisfaction is concerned with the organization's processes for listening to the customers, determining their satisfaction, engagement, and dissatisfaction. In addition this initiative's emphasis is analyzing and using customer data to improve marketing, builds a more customer-oriented culture, and identify opportunities for innovation. The organization must have effective systematic processes in place to determine customer satisfaction and dissatisfaction. Such processes give a source of information about the behavior, perceptions, and support of all customers. Comparative analysis is a key aspect of such data for benchmarking tasks. The purpose of this data is to be used for improvement throughout the organization and by the partners.

Complaint management is an important part of customer relationships that involves capturing, aggregating, analyzing, and learning from complaint information by employees in the organization as well as partners in the supply chain.

Links:

- To make certain hardware and software systems are reliable and easy to use, information from various types of system users is collected including leaders, customers, suppliers, and partners as well as people who monitor and interpret results for decision making.

Effective Practices

- Critical business processes or functions are the focus of benchmarking. They include activities that support the organization's goals and objectives, action plans, and opportunities for improvement and innovation. Benchmarking is applied to key products, services, supplier, etc.

Baldrige Criteria Data Analysis validation through SCOR

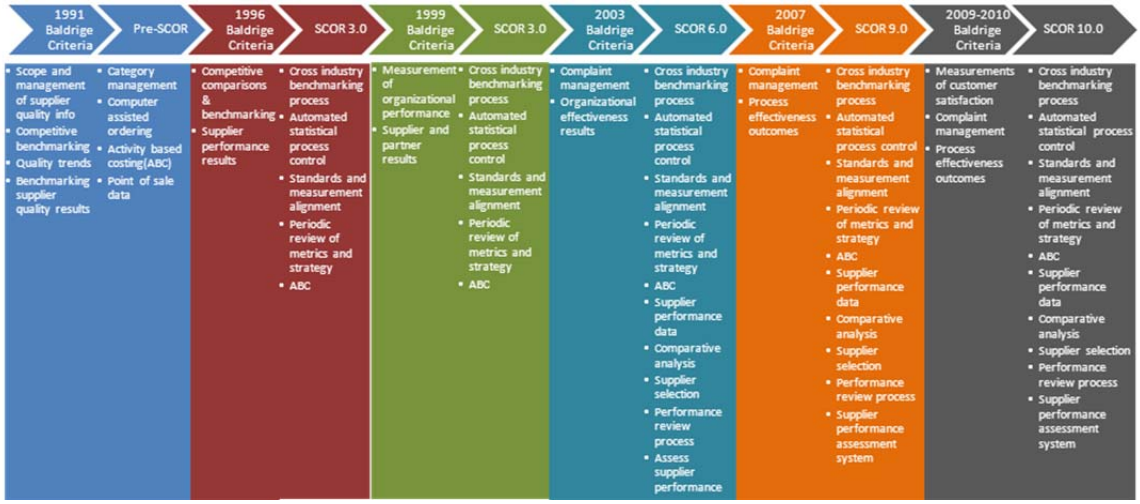

Figure 13 Illustrating the progression of Data Analysis supply chain initiatives and SCOR best practices

There are plenty of direct correlations between the Data Analysis classification Baldrige Criteria supply chain initiatives and SCOR supply chain best practices. During the early years, Data Analysis in the Baldrige Criteria appeared to be ahead of the supply chain best practices pushed by the research efforts of Kurt Salmon Associates. Even during the Baldrige Criteria's emphasis on the total quality management movement, indices, benchmarking, trends, and other comparative data were the focus within this

classification. The industry and competitor's practices within an industry were used as measures that an organization should strive to achieve and exceed. Kurt Salmon Associates' best practices were primarily concerned with connecting to the customer in the supply chain as opposed to the supplier. Such endeavors as *activity based costing* and *category management* point to this emphasis. *Point of sale data* and *computer assisted ordering* were attempts to go beyond the organization but don't appear to be nearly as thorough as the Baldrige Criteria's attempts.

As the quality era moved out and the Baldrige Criteria shifted to performance excellence, the same measures and data remained the primary focal points with more of an emphasis on performance results, namely improvements in such results over time. Though the actual data obtained for measurement remained pretty consistent, the technology for attaining and measurement tools did evolve to help data become easier to collect, more accessible to partners and suppliers, and more accurate. The SCOR model and the Baldrige Criteria line up well within the Data Analysis classification. *Cross industry benchmarking process* through the leveraging of metrics and definitions, *standards and measurements alignment* for the maximization of supply chain performance, and *periodic review of metrics and strategy* through industry benchmark comparisons all seemingly could have come directly from the Baldrige Criteria given the similarities between these SCOR model best practices and the Baldrige initiatives. The SCOR model expands on Data Analysis when *assess supplier performance*, *supplier performance data*, *performance review process* and *comparative analysis* of supplier performance for sourcing decisions come in as best practices in future versions. These best practices are all closely related to the supply chain initiatives outlined in the Baldrige

Criteria and like the Baldrige initiatives sometimes appear to be somewhat repetitive in their purpose (Supply Chain Council, 2010).

Communication Supply Chain Initiatives

1991 Baldrige Criteria Communication

Supplier quality communication looks at the communication an organization has with its suppliers. This initiative begins with the identification of quality requirements for goods and services received from key suppliers. Critical measures or indicators used to monitor and evaluate supplier performance are a part of this initiative as well. The key step in this process is a clear description of how the organization communicates quality indicators and requirements to suppliers as well as the establishment of mechanisms to give feedback to suppliers about how well they perform in meeting these requirements.

Indicators

- Identification of critical suppliers
- Degree to which measurable quality indices and requirements/standards are identified for suppliers.
- Extent to which suppliers are involved in the formulation of indices and standards/requirements.

Supplier quality assurance is concerned with ensuring a well-defined and effective method for verifying organizations' suppliers meet their quality standards is in place. This area begins with the methods used to determine requirements for the goods and services provided by suppliers and how they are communicated to the suppliers. Next, the method for monitoring supplier performance and providing feedback so

suppliers can make corrections is required. If appropriate, an explanation of the audit or assessment process should also be included.

Indicators

- Use of a multi-faceted approach for the assurance of supplier quality
- Organization's requirements have been defined and communicated to suppliers
- Systems are in place for measuring supplier performance regularly and for giving the suppliers proper feedback so they can improve their performance
- Procedures exist to audit/assess supplier processes, products, and services
- Trend in quality related efforts with suppliers shows continuous improvement over the years

(Graham, 1991)

1995 Baldrige Criteria Communication

Supplier requirements are concerned with the critical measures and indicators used to monitor and evaluate supplier performance and how they are determined. Such indicators and requirements must be communicated to those suppliers. In addition, feedback must be provided to suppliers on how well they do in meeting performance requirements. The method used for carrying out such communication is the focus here.

Indicators:

- Identification of critical suppliers
- Degree to which measurable quality indices and requirements/standards have been identified for suppliers

- Extent to which suppliers are involved in the formulation of indices and standards/requirements
- Presence of effective system for communicating standards/requirements to suppliers
- Feedback system for keeping suppliers informed regularly about their performance of key quality indicators
- Amount of effort devoted to assurance of supplier performance is appropriate given the extent the organization depends on its suppliers (Graham, 1995)

1996 Baldrige Criteria Communication

Supplier requirements requires basic information concerning the company's main supplier requirements including expected performance and measures used for performance assessment, the method used by the company to find out if requirements are met, and how performance information is relayed to suppliers.

Effective Practices

- Quality requirements are clearly defined and communicated to suppliers.
- Decisions on the use of particular suppliers are driven by measurable quality indicators of the supplier as well as price.
- Measures of expected supplier performance are in place.
- Data on supplier performance are available to suppliers.

(Blazey, 1996)

2003 Baldrige Criteria Communication

Senior leadership direction looks at "outgoing actions of leaders." It involves the way senior leaders use to create and sustain values that stimulate high performance throughout the organization. This process includes setting and deploying values, short and long term directions, and performance expectations as well as balancing the expectations of customers and stakeholders. Senior leaders must ensure two-way communication with subordinate leaders and employees, key suppliers, and partners in regards to organizational values, directions, and expectations. This also allows senior leaders to obtain feedback without the need for the leaders to go seeking feedback as prescribed in previous Criteria.

Accessibility of data and info examines how the organization guarantees key users including employees, suppliers/partners, and customers have access to high quality, timely data and information. Data and information are particularly important in business networks, alliances, and supply chains. Information management systems must facilitate the use of data and information and carry out rapid data validation since electronic data transfer is being used at an increasing rate. Top-performing organizations carry out this process by utilizing hardware systems and software that are reliable and user-friendly.

Organizational knowledge places emphasis on the need to transfer knowledge from employees, customers, suppliers, and partners for the benefit of the organization. It also involves the sharing of best practices that may benefit the organization and key partners. Required data and information must meet user needs which include: integrity (completeness), reliability (consistency), accuracy, timeliness, and proper levels of security. For performance excellence, systematic evaluation and improvement of data

availability mechanisms, software, and hardware are needed to remain relevant to changing business needs and directions.

Effective Practices

- Data and knowledge exchange is in place to gather useful knowledge and information from customers, suppliers, partners, and other key stakeholders. The system should be automated to ease the update and end access.

(Blazey, 2003)

2007 Baldrige Criteria Communication

Communication and organizational performance is concerned with how senior leaders ensure two-way communication with subordinate leaders and employees, key suppliers, and partners in regards to organizational values, directions, and expectations. This also allows senior leaders to obtain feedback as well. This initiative is dependent on the organizations ability to conduct effective analyses to support senior leaders' evaluations of all areas of performance and strategic planning. Review findings should give a consistent method to guide improvement and innovation opportunities that are linked to the organization's key objectives, success factors, and measures. Organizational-level analysis results must be effectively communicated by leaders to support decision making throughout the organization and to suppliers, partners, and key customers. Those decisions should be aligned with business results, strategic objectives, and action plans.

Organizational knowledge management places emphasis on the need to transfer knowledge from and to customers, suppliers, partners, and collaborators for the benefit of the organization as well as the prompt identification, sharing, and implementation of best practices. Required data and information must meet user needs which include: integrity (completeness), reliability (consistency), accuracy, timeliness, and proper levels of security. For performance excellence, systematic evaluation and improvement of data availability mechanisms, software, and hardware are needed to remain relevant to changing business needs and directions.

Effective Practices

- Data and knowledge exchange is in place to gather useful knowledge and information from customers, suppliers, partners, and other key stakeholders.

- The system should be automated to ease the update and end access. (Blazey, 2007)

2009-2010 Baldrige Criteria Communication

Leadership must promote organizational core values, set performance expectations, and promote an organization-wide focus on stakeholders. Senior leaders are required to communicate clear values and performance expectations that tend to the needs of stakeholders. They must also ensure accountability of management's actions, transparency in operations, and the protection of stakeholder interests.

The direction and values set by leaders must be clearly communicated to all stakeholders so they understand their responsibilities and align work to achieve desired

results. The expectations of customers and stakeholders must also be balanced. A customer culture must be created by including customers and stakeholders in the value system. Two-way communication must be present between leaders and key suppliers and partners in regards to values, directions, and expectations.

Senior leadership vision and values is concerned with the senior leaders' responsibilities in regards to setting and communicating the organization's vision and values. It emphasizes the need to create and maintain a high-performance organization with a business and customer focus. Such leaders promote high performance, balance value for all stakeholders, set clear values and directions, and communicate them clearly to ensure all stakeholders understand their responsibilities and align work to accomplish desired results. The values must be focused on customers and other stakeholders. Since conflicting interests can arise, leaders are responsible for finding an optimal balance to appease all parties involved.

In order to have success, leaders must understand and support the Criteria for Performance Excellence. In addition, various techniques must be utilized to make the use of Performance Excellence Criteria mandatory. They promote high performance, create value and balance for all stake holders, set clear values and directions, and communicate them effectively to ensure all stakeholders are aware of their responsibilities and can align their work to arrive at desired outcomes.

Leaders must make sure organizational values as well as their own actions guide the workforce and that these are the right values. They must include an emphasis on customers and other stakeholders. Since customers and other stakeholders have conflicting goals, an appropriate balance must be found that optimizes each group's

interests. Not doing so can lead to an inward focus which leads to the neglect of the customer.

Links:

- Leaders must create an environment that supports high performance and continuous improvement, including monitoring processes for the design of work systems, and design, management, and improvement of key work processes.

Effective Practices:

- Senior leaders require that all key processes identify internal and external customers and other stakeholders that potentially have competing interests; customer and other stakeholders' requirements must be defined in measureable terms; processes must also monitor customer and stakeholders' satisfaction and take corrective action quickly if necessary.

Accessibility of data and information looks at how the organization guarantees the availability of high quality, software, and hardware for all the workforce, suppliers, partners, collaborators, and customers. In addition, it looks at how the organization builds and manages its knowledge assets for the improvement of organizational efficiency and effectiveness as well as the stimulation of innovation. Top-performing organizations make data available to all appropriate users with hardware systems and software that are reliable and easy to use. Data and information are extremely pertinent in business or organization networks, alliances, and supply chains. Processes should also be in place to protect against a disaster that may be a hazard to critical data. All stakeholders must be considered when planning such a structure.

Organizational knowledge management places emphasis on the need to transfer knowledge from and to customers, suppliers, partners, and collaborators for the benefit of the organization as well as the prompt identification, sharing, and implementation of best practices. Required data and information must meet user needs which include: integrity (completeness), reliability (consistency), accuracy, timeliness, and proper levels of security. For performance excellence, systematic evaluation and improvement of data availability mechanisms, software, and hardware are needed to remain relevant to changing business needs and directions (Blazey, 2009).

Baldrige Criteria Communication Validation Through SCOR

Figure 14 Illustrating the progression of Communication supply chain initiatives and SCOR best practices

As stated in the methodology, the Communication classification is closely related to Collaboration. Certain Baldrige Criteria initiatives as well as SCOR best practices given their descriptions could conceivably be in both classifications. For this research, the distinction is Communication simply involves the flow of information. In looking at the Baldrige Criteria, a common theme is electronic data interchange (EDI) which can be traced back pre-SCOR to the research conducted by Kurt Salmon Associates. The primary focus during this time was evolving the technology for efficiency and the integration of the supply chain. EDI is a technology that also shows up in SCOR. *EDI resource integration* involves the linking of supplier resource information such as inventory and capacity capability with an organization's resources. In the Baldrige Criteria, a typical initiative, *accessibility of data and info* focuses on the assurance of high quality, timely data and information. EDI is paramount for the carrying out of this initiative given the need for reliable and user friendly hardware systems and software. *Organizational knowledge* is a similar initiative that looks at user needs and states that required data and information should have the following qualities: integrity (completeness), reliability (consistency), accuracy, timeliness, security. The early Baldrige years had an initiative, *supplier requirements,* which was concerned with defining standards, measures, and indicators for assessing supplier performance and communicating these requirements and assessments with suppliers. In the SCOR Model this initiative falls in line with *performance and business communication* which requires the clear communication of performance expectations and business rules to the supplier prior to any business transactions. Another relevant best practice is *supplier performance*

data in which data must be collected, analyzed and reported to suppliers through real time extranet applications (Supply Chain Council, 2010).

Senior leadership and vision and values are common concepts in the Baldrige Criteria that seek to set ethics and values that must be communicated to partners, suppliers, customers, etc. This creates a direct link between executives and stakeholders. Particularly when compared to the Malcolm Baldrige Critera which contains a whole category focused on leadership, the SCOR Model appears to be substantially less concerned with executive involvement with suppliers and partners as a best practice. The SCOR model does encourage that *strategic sale and operations planning process*, a best practice discussed in Planning, be managed at the executive level. Beyond this best practice, few best practices call for leadership involvement with suppliers. However, given the SCOR Model's emphasis placed on Collaboration, the SCOR Model likely assumes this is an obvious necessity that will occur inevitably when SCOR is properly implemented. Within the SCOR model values are referenced as an input for the manage business rules for plan process. This process is concerned with establishing, maintaining, and enforcing decision support criteria for supply chain planning that translate to rules for conducting business. Business rules align plan process policies with business strategy, goals, and objectives (Supply Chain Council, 2010). Within the Communication classification, the Baldrige Criteria appears to be quite respectable in best practice going back even to the total quality management era.

Collaboration Supply Chain Initiatives

1991 Baldrige Criteria Collaboration

Senior executive leadership is concerned with what executives' do, not what they say. All senior executives should spend a large percentage of their time involved in a wide range of quality oriented activities.

Indicators:

- Time spent meeting with suppliers and customers discussing quality issues.

Design and introduction of quality products/services is concerned with the process used by an organization to design and test new products and services. Supplier capabilities must be considered during this process. Capabilities are essential to reviewing the feasibility of product and service designs. Involving suppliers in the design review process is necessary especially when outside parts, materials, and/or services are needed for key product/service requirements to be met.

Indicators:

- Suppliers are involved in reviewing product/service designs

(Graham, 1991)

1995 Baldrige Criteria Collaboration

Senior executive leadership is concerned with senior executive leadership and their involvement in putting in place directions and developing and maintaining a leadership system that leads to performance excellence. They have a leading role in setting values and expectations which should account for all stakeholders including customers, suppliers, stockholders, and partners. The actions of senior executives are

greatly related to a company's achievement of world class performance levels. Active involvement by spending time with and listening to customers, suppliers, and other stakeholders is paramount.

Design and introduction of products and services is concerned with the gathering of information about customers' requirements and wants and the process for translating this information into product or service characteristics and standards. Of utmost importance is that input is received early in the design phase by all parties involved including suppliers and partners. Systems, procedures, and meetings used to carry this out are all important for proving this task is properly undertaken. After input is obtained, involvement at proper phases in the design and introduction cycle should then be assured (Graham, 1995).

1996 Baldrige Criteria Collaboration

Senior executive leadership is concerned with how company's senior executives set strategic direction and build and preserve a leadership system that fosters high performance, individual development, and organizational learning. In doing so, executive leadership must take into account all stakeholders, including customers, stockholders, suppliers, and partners. In addressing this item, information on the primary aspects of leadership are required including creating values and expectations, setting direction, developing and maintaining an effective leadership system, and building company capabilities.

Effective Practices:

- Executives personally spend time with suppliers and customers.

Design and introduction of products/services analyzes how a company designs and introduces products and services. A primary focus of this item is on the rapid and effective integration of production and delivery early in the design phase to minimize downstream issues for customers and eliminate the need for design changes that might be costly to the company. The three aspects of design that are of importance are the translation of customer requirements into the design requirements for products and services, how the product and service design requirements are translated into efficient and effective production/delivery processes, and how all requirements associated with products, services, and production/delivery processes are dealt with early in the design process by all appropriate company units to ensure integration and coordination. In addition, businesses should consider requirements for suppliers and business partners at the design stage. It is imperative that effective design account for all stakeholders in the value chain.

Effective Practices:

- Concurrent engineering is used to operate several processes(R&D, marketing, supplier certification, etc.) in parallel as appropriate. Coordination through effective communication and teamwork is needed for this to occur properly.

- Internal process capacity and supplier capability, using measures such as C_{pk}, are reviewed and considered before production and delivery process designs or plans can be finalized.

- Management of supplier performance is concerned with how the company manages the performance of external providers of goods and services. Such management might be constructed around long term partnering relationships, especially with key suppliers.

  (Blazey, 1996)

1999 Baldrige Criteria Collaboration

Senior leadership direction is concerned with the method employed by leaders to set directions and build and maintain an organization that fosters high performance. Leaders must take into account key stakeholders including customers, employees, suppliers, partners, stockholders, the public, and community. The major aspects of leadership are involved: creating vales and expectations, setting directions, projecting a strong customer focus, and effectively demonstrating, communicating, and deploying values, directions, expectations, and a strong customer focus. Leadership must make sure the organization captures and shares learning.

Effective Practices:

- Senior leaders spend time with suppliers, partners, and customers.

Ethical practice requires information on how the organization ensures the ethical behavior of all stakeholder interactions.

Links:

- Managers at all levels must ensure that work practices of the organization and its suppliers meet the organization's standards of ethics and public responsibility.

Process Management is the focal point in the Criteria for all key work processes. This category includes the central requirements for efficient and effective process management such as effective design, prevention orientation, linkage to suppliers and partners, operational performance, evaluation, and continuous improvement. Flexibility is an increasingly important part of process management and organizational design. Flexibility refers to the ability to adapt quickly and effectively to changing requirements. Flexibility can involve different objectives for different organizations; however it has increasingly begun to encompass outsourcing decisions, agreements with key suppliers, and unique partnering arrangements.

Design processes require information on design of products and services, and their production/delivery processes. Organizations with suppliers that are critical to design and delivery should account for how these suppliers might affect the success of the product or service launch. Effective design should take into account all stakeholders in the value chain including key suppliers, dealers, and distributors. It may be possible to carry out multiple design projects in parallel or coordinate resources to reduce unit costs and time to market.

Links:

- Effective management of supplier and partner performance can result in improved operations processes by reducing error, rework, and delay.
- Information about supplier performance is essential to the supplier and implementation of new, modified, or customized products and services.
- Supplier and partner capabilities, as indicated by performance results are considered in the design process for support services.

- Make sure performance requirements are met, minimize supplier cost, and aid suppliers in improving performance as well as their ability to help the organization.

Effective Practices:

- Concurrent engineering used to coordinate several processes (such as R&D, manufacturing, marketing, supplier certification) in parallel as much as possible through communication and collaboration
- Internal process capacity and supplier capability, through measures such as Cpk, are reviewed and considered before production and delivery process designs or plans are finalized

Supplier and partnering processes deals with how the organization designs, implements, operates, and improves its supplier and partnering processes and relationships. In addition, it addresses supplier and partner performance management and improvement. This item focuses on the unique relationships organizations strive to create with key and preferred suppliers. In many cases, such suppliers play an increasingly important role in achieving high performance, lower cost objectives, and strategic objectives. Supplier and partner performance requirements must be outlined by the organization. Audits, process reviews, receiving inspections, certification, testing, and rating systems are all methods used for validating that requirements are met.

Plans must be developed and action taken on these plans to improve the ability of the suppliers and partners to aid the organization in attaining performance goals. Such plans and actions may include:

- Improving the organization's procurement and supplier management processes (through the use of feedback from suppliers and internal customers.
- Adjusting supplier selection with the goal of reducing the number of suppliers and enhancement of partnership agreements
- Joint Planning
- Rapid information and data exchanges
- Use of benchmarking and comparative information
- Customer-Supplier teams
- Providing training to suppliers and partners
- Long-term agreements
- Incentives
- Recognition

Links:

- Leaders at all levels who interact with suppliers and partners are responsible for helping them attain systematic improvement of performance on key indicators and that they operate in a way that is consistent to the organizations commitment to the public, including regulations.
- Goals deployed through the key supplier chain, are used to drive improved supplier performance in critical areas.

- Problems and issues with supplier performance are used to aid in identifying and prioritizing benchmarking targets. Benchmarking and comparison data are used for the improvement supplier performance initiatives.
- Data is analyzed to aid in the improvement of supplier and partner work processes and performance.
- Improved supplier performance can be instrumental for the improvement of work processes.
- Improved supplier processes leads to better supplier performance and maybe better financial performance.
- Financial and market results are enhanced by improvements in product and service processes, support processes, and supplier and partner processes.

Effective Practices:

- Performance requirements are clearly and measurably defined and communicated to suppliers
- Supplier selection is driven by measurable performance characteristics of the supplier's capabilities to attain and exceed high levels of performance excellence as opposed to price.
- Expected supplier performance measures are in place.
- Data on supplier and partner performance is routinely made available to suppliers to allow for the rapid adjustment and improvement in performance.
- The organization maintains a system to review and improve its own procurement processes and methods for communication with and selection of supplier.
- Procedures exist to improve supplier and partner performance (fewer defective parts, rework, etc.) including training and certification programs. The organization systematically helps key suppliers make improvements to their performance and capabilities. In addition, this information is shared throughout the organization.
- Improvements in the internal performance systems of suppliers and partners are undertaken to reduce unnecessary costs such as incoming inspection and audits.

(Blazey, 1999)

2003 Baldrige Criteria Collaboration

Ethical behavior is concerned with how the organization, its senior leaders, and employees make sure ethical business practices are adhered to in all stakeholder transactions and interactions. Standards of ethical behavior must be expressed if possible in measurable terms. The organization must systematically track ethical behavior throughout not just the organization but also with key suppliers and partners and within governance structure.

Effective Practices:

- A process is available to ensure the understanding of ethical principles for all people who must follow the principles including suppliers and partners.
- An audit process is in place to communicate and guarantee ethical requirements, and practices are deployed to all levels of the organization as well as to key partners and suppliers.

Value creation process focuses on key design processes for products and services as well as their related production and delivery processes that create value for the organization, its customers, and stakeholders. Key process descriptions are needed that include specific requirements and details on how performance relative to the requirements are ascertained and preserved. Agility (speed and flexibility) is increasingly likely to be a key requirement to adapt to change. An important factor in design is supplier capability. Cutting edge technology, including e-technology should be included in the design of products and services. E-technology may involve new ways of electronically sharing information with suppliers/partners. The highest performing organizations consider requirements of suppliers and/or business partners at the design

stage. This reduces the chances of important design considerations being unmet due to supplier and/or partner limitations. Effective design systems account for all stakeholders in the value chain. To enhance design process efficiency, all supplementary design and production activities must be coordinated within the organization. Such coordination may include key suppliers among other business functions such as R&D and marketing. Such coordination typically leads to meaningful reductions in unit costs and time to market.

As a key business process, supply chain management, supplier partnering, and outsourcing have become increasingly important. Suppliers and partners are gaining more attention from a strategic standpoint as organizations analyze and outsource their core functions. The overarching goals are to improve the performance of suppliers and partners in order to contribute to better internal organization performance. Supplier selection with the objective of reducing the total number of suppliers and increasing preferred supplier and partnering agreements.

Effective Practices:

- Concurrent engineering is used to operate several processes(R&D, marketing, supplier certification, etc.) in parallel as appropriate. Coordination through effective communication and teamwork is needed for this to occur properly.
- Internal process capacity and supplier capability, using measures such as C_{pk}, are reviewed and considered before production and delivery process designs or plans can be finalized.

Support processes are those that support daily operations but are typically not designed in detail along with products and services. Determining key support process requirements and managing these support processes through the use of input from suppliers and partners is a necessary consideration here. Support process requirements usually are not particularly dependent on product and service characteristics but need to be coordinated and integrated for efficient and effective connectivity and performance. Finance and accounting, software services, public relations, human resource services, legal services etc. are examples of support processes. Top organizations evaluate and improve support processes for performance considerations and to keep the relevant to business needs and directions. Four approaches for this are:

1. Process analysis and research
2. Benchmarking
3. Alternative Technology
4. Information gathered from customers of the processes

(Blazey, 2003)

2007 Baldrige Criteria Collaboration

Senior leadership vision and values is concerned with the senior leaders' responsibilities in regards to setting and communicating the organization's vision and values. It emphasizes the need to create and maintain a high-performance organization with a business and customer focus. Such leaders promote high performance, balance value for all stakeholders, set clear values and directions, and communicate them clearly to ensure all stakeholders understand their responsibilities and align work to accomplish desired results. The values must be focused on customers and other stakeholders. Since

conflicting interests can arise, leaders are responsible for finding an optimal balance to appease all parties involved.

Effective Practices

- Senior leaders require all key processes identify internal and external customers as well as stakeholders who may have competing interests. Customer and stakeholder specific requirements must be defined in measurable terms. Processes must be developed and implemented to monitor customer and stakeholder satisfaction and must be able to rapidly make corrections.

Process Management is the central point within the Criteria for all key work processes. This category has built in the primary requirements for identification and management of the organization's core competencies to attain efficient and effective work process management including: linkage to customers, suppliers, partners, and collaborators as well as an emphasis on value creation for all stakeholders; supply chain integration, operational and financial performance; and organizational learning. Agility refers to an organization's ability to adapt quickly, flexibly, and effectively to changing requirements. Agility increasingly begins to include outsourcing decisions, agreements with key suppliers, and unique partnering arrangements.

Work Systems Design are core and key business processes needed to produce and deliver the organization's products and services, deliver value to customers and key stakeholders, and improve market and financial position. Duties that must be carried out relative to work systems design are:

- Determination of what processes in the organization's work systems will be conducted in-house and which will be outsourced to external vendors
- Determination of core competencies
- Design, develop, and introduce products and services to meet customer requirements, operational-performance requirements, and market requirements
- Improve these design processes
- Ensure continuity of operations in an emergency

Work process management and improvement involves processes that support value creation and business operations. Duties relative to such processes include:

- Management and control of key work processes to meet customer requirements
- Use of customer feedback and in-process measure to control and improve the performance of the processes

Work process design is concerned with core competencies, work systems, and design of work processes with the goals of maximizing customer value, emergency preparedness, and achievement of organizational success and sustainability. Core competencies refer to the organization's areas of greatest expertise. They are difficult for outside entities to duplicate and are a competitive advantage. Work systems are the work the organization get done. They involve the workforce, key suppliers and partners, collaborators, and other supply chain components required to produce and deliver products, services, and business and support processes. Work systems synchronize internal and external resources for the development, production, and delivery of products

and services to the customer. Work processes are the organization's most important product and service design and delivery, business, and support processes.

Agility (speed and flexibility) is increasingly likely to be a key requirement to adapt to change. An important factor in design is supplier capability. Cutting edge technology, including e-technology should be included in the design of products and services. E-technology may involve new ways of electronically sharing information with suppliers/partners. The highest performing organizations consider requirements of suppliers and/or business partners at the design stage. This reduces the chances of important design considerations being unmet due to supplier and/or partner limitations. Effective design systems account for all stakeholders in the value chain. To enhance design process efficiency, all supplementary design and production activities must be coordinated within the organization. Such coordination may include key suppliers among other business functions such as R&D and marketing. Such coordination typically leads to meaningful reductions in unit costs and time to market.

As a key business process, supply chain management, supplier partnering, and outsourcing have become increasingly important. Suppliers and partners are gaining more attention from a strategic standpoint as organizations analyze and outsource their core functions. The overarching goals are to improve the performance of suppliers and partners in order to contribute to better internal organization performance. Supplier selection with the objective of reducing the total number of suppliers and increasing preferred supplier and partnering agreements.

Effective Practices:

- Concurrent engineering is used to operate several processes(R&D, marketing, supplier certification, etc.) in parallel as appropriate. Coordination through effective communication and teamwork is needed for this to occur properly.
- Internal process capacity and supplier capability, using measures such as C_{pk}, are reviewed and considered before production and delivery process designs or plans can be finalized.

Work process management analyzes the implementation, management, and improvement of the organization's key work processes, with the goal of generating value for customers and achieving organizational success and sustainability (Blazey, 2007).

2009-2010 Baldrige Criteria Collaboration

Work systems design is concerned with core competencies, work systems, and work process decisions with the intention of maximizing customer value, guaranteeing emergency preparation, and achieving organizational success and sustainability. The work system includes internal and external tasks to the organization. This item looks at not only the work processes and key requirements for meeting customer needs and expectations, but also the use of input from customers, suppliers, partners, and short term collaborators.

Key work processes include both product related and non-product business related processes. They are typically related to the organization's core competencies, strategic objectives, and critical success factors. Key business processes may include technology

acquisition, information and knowledge management, supply chain management, global expansion, supplier partnering, outsourcing, mergers and acquisitions among others.

In many organizations, supply chain management is becoming a primary factor in accomplishing productivity and profitability goals and overall organizational success. Suppliers, partners, and collaborators are receiving more strategic attention. At the same time, organizations are reexamining their core competencies to ensure they provide a competitive advantage. Otherwise, it should be done outside of the organizations walls. Processes used by an organization to interact and manage suppliers should strive for a couple of objectives: help improve the performance of suppliers and partners and take advantage of the skill such outside entities possess to improve the organization's work systems. Supply chain management can help organizations select better suppliers, reduce the overall number of suppliers, and establish long standing, preferred supplier and partner agreements. Organizations may have to define requirements for suppliers, partners, and collaborators in conjunction with their own work systems and work process design. For effectiveness, design processes must consider all stakeholders in the value chain.

Work processes examines the design, management, and improvement of key work processes. Such key work processes are vital to creating value for customers and achieving organizational success and long-term sustainability. The customer's requirements and expectations for the products have to be considered over the course of the design process. Some normal factors to consider in work process design are safety, measurement capability, process capability, variability in customer expectations requiring various options, and supplier capability. The best performing organizations accurately

and fully define primary production/delivery processes, their key performance requirements, and key performance measures. Such requirements and measures are the basis for monitoring, maintaining, and improving, products, services, and production/delivery processes. New technology may be included in the design process. A potential use may be for sharing information with suppliers, partners, and collaborators as well as communicating with customers. The best performing organizations account for requirements from suppliers, partners, and collaborators early in the design stage. This will help reduce the likelihood that important design issues arise because of supplier and/or partner limitations. High-performance work is also enhanced by systems that promote flexibility, innovation, knowledge and skill sharing, good communication and information flow, alignment with organizational objectives, customer focus, and rapid response to fluid business needs and requirements in the marketplace (Blazey, 2009).

Baldrige Criteria Collaboration Validation Through SCOR

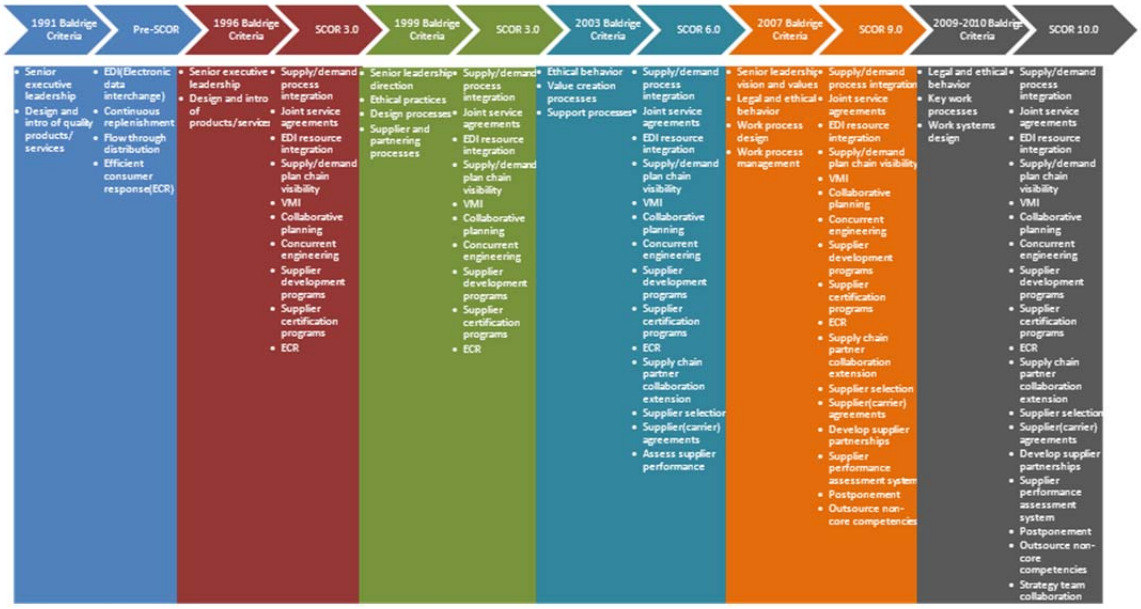

Figure 15 Illustrating the progression of Collaboration supply chain initiatives and SCOR best practices

Based on the research thus far, it can easily be seen that Collaboration has the most relevance to the Baldrige Critera and the SCOR model. Between the Baldrige Criteria scoring emphasis as well as the volume of initiatives and best practices in the Baldrige Criteria and SCOR model, its importance within the supply chain cannot be understated. Given what a supply chain is and how supply chain management has evolved, it's not surprising Collaboration grows to be the premier classification for this research. Like Communication, Collaboration involves the flow of information but goes further to a more physical level to joint activities such as meetings, training sessions, workshops, conferences, projects, and/or other unified efforts.

The Baldrige Criteria has during its early years a regularly present initiative, *design and introduction of products/services*. The goal of this initiative was the rapid and

proper integration of production and delivery in the early design phase to reduce downstream issues for customers and eliminate the need for expensive design changes. Requirements for supplier and business partner and any other stakeholders in the value chain must be accounted at the design stage. Concurrent engineering and management of supplier performance through long term partnering relationships are considered effective practices in relation to this initiative. This initiative evolved and expanded from early quality and performance excellence years to progressively become more focused on processes, more precisely process management, under names such as *design processes, supplier and partnering processes, work process design, work process management, key work processes* all with the goal of evolving towards dealing with how the organization designs, implements, operates, and improves its supplier and partnering processes and relationships. Plans and actions for performance goals include supplier selection, enhanced long term partnerships, training, joint planning, and rapid information and data exchanges to name a few. The need to properly adapt to change brought about a shift in the 2000's from not just flexibility but to agility as a requirement. Outsourcing decisions, supplier agreements, and partnering arrangements became an increasing part of agility. As discussed in Data Analysis, EDI is needed with cutting edge technology for this to take place. Over this timeframe, supply chain management, supplier partnering, and outsourcing all had become key business processes. By 2007, process management began to include the identification and management of core competencies for efficient and effective work process management. A key step for this evolving initiative in later years became the examination of core competencies to ensure they created a competitive

advantage. Otherwise, such competencies should be outsourced beyond the organizations walls.

Many of the actions these Baldrige Criteria initiatives call for are apparent in the form of SCOR model best practices. *Concurrent engineering* is utilized to allow suppliers to provide engineering and product performance test data. *Joint service agreements* allow customers and suppliers to share risks on resources committee to increase flexibility. *Supplier certification programs* and *supplier development programs* are used to get local suppliers to invest in developing new technologies and reduce cycle times. *Supplier evaluation* involves suppliers being evaluated, selected, and qualified with criteria matched to business requirements and competitive needs that tie in with other best practices. *Supply chain visibility* is a best practice where all key participants in the supply chain have full visibility of the demand/supply plan. *Outsource non-core competencies* enters with the release of SCOR model version 9.0 in 2008 around the same time the Baldrige Criteria begins to emphasize the importance of identifying core competencies and outsourcing non-core competencies (Supply Chain Council, 2010). Not surprisingly, these best practices embody what the Baldrige Criteria promotes within its Collaboration initiatives.

Improvement Supply Chain Initiatives

1991 Baldrige Criteria Improvement

Supplier quality assessments is concerned with the auditing process and the follow up for the purpose of correcting any problems uncovered. The distribution of information resulting from such audits and plans for assigning and following up are needed to address this criteria. The use of the audits to bring about change must also be

addressed. Examples of previous problems and how they were attended to are also of interest. For the purpose of this research, this is all done in relation to supplier requirements.

Supplier quality improvement is an initiative concerned with the establishment of a strong, cooperative relationship between an organization and its suppliers. Different methods can be utilized to do this. Organizations may foster long-term relationships with suppliers who prove they are able to meet or exceed quality requirements or organizations could work with suppliers to set goals and develop plans and strategies for accomplishing such goals. All endeavors to improve the relationship with the supplier should be described. Joint activities between the organization and the suppliers are another part of this initiative. Incentives or awards given based on supplier performance and methods for improving supplier selection are part of this initiative as well.

Indicators:

- Evidence of a cooperative relationship between organization and its suppliers
- Joint quality related activities are undertaken by the organization and its suppliers
- Selection criteria for suppliers emphasizing quality
- Existence of incentives for suppliers to improve quality
- Awards/recognition to reward suppliers for quality milestones
- Long term partnerships with suppliers who prove their abilities in the quality arena

(Graham, 1991)

1995 Baldrige Criteria Improvement

Supplier management is concerned with what a company is doing to improve its performance in the procurement area. Gathering data on internal customer satisfaction and supplier feedback are necessary for this initiative. Evidence of strong complementary relationships is also important. All efforts to improve this relationship are pertinent. Efforts for improvement of supplier selection also need to be addressed here.

Indicators:

- Use of reliable methods to obtain data on supplier satisfaction ratings
- Evidence of a cooperative relationship between organization and suppliers

- Joint performance improvement activities are done involving suppliers' employees (training, planning meetings, etc.)
- Existence of incentives to encourage supplier improvement
- Awards or recognition programs to recognize supplier performance
- Use of long term partnerships or contracts with suppliers who prove they can consistently meet or exceed and organization's expectations
- Reduction or elimination of inspection for supplier goods due to supplier performance

(Graham, 1995)

1996 Baldrige Criteria Improvement

Management of supplier performance is concerned with how the company manages the performance of external providers of goods and services. Such management might be constructed around long term partnering relationships, especially with key suppliers.

Supplier management improvement requires information on how the company evaluates and improves its supplier management. This item involves three main elements: improving supplier ability to meet requirements, improving the company's supplier management processes, and reducing costs associated with the verification of supplier performance. For many companies, suppliers are an increasingly pertinent part of meeting high performance expectations and lower cost objectives as well as strategic objectives. Key suppliers potentially can provide unique design, integration, and

marketing capabilities. Joint planning and partner relationships are needed for proper exploitation of such an advantage.

Links:

- Issues in supplier improvement processes are used to help identify and prioritize benchmarking targets. Benchmarking data are used to improve supplier performance initiatives.
- Strategic goals deployed through the supply chain are used to drive improved supplier performance in critical areas.
- Improved supplier performance may be required for the improvement of work processes.
- Improved supplier processes lead to better supplier performance, work processes, and support work processes.
- Managers at all levels that work with suppliers have a duty to ensure systematic improvement of supplier performance on key quality indicators and ensure that suppliers do not behave in an inconsistent manner relative to the organization's commitment to the public, including regulatory compliance.

Effective Practices:

- The organization has a system in place to review and improve its own procurement processes and processes for communicating with and selecting suppliers.

- Procedures are in place to improve supplier quality, such as few defective parts and less rework and scrap) that may include supplier training or certification programs.
- Actions are taken to reduce needless costs such as incoming inspection or testing by improving internal performance systems of suppliers. (Blazey, 1996)

1999 Baldrige Criteria Improvement

Supplier and partnering processes deals with how the organization designs, implements, operates, and improves its supplier and partnering processes and relationships. In addition, it addresses supplier and partner performance management and improvement. This item focuses on the unique relationships organizations strive to create with key and preferred suppliers. In many cases, such suppliers play an increasingly important role in achieving high performance, lower cost objectives, and strategic objectives. Supplier and partner performance requirements must be outlined by the organization. Audits, process reviews, receiving inspections, certification, testing, and rating systems are all methods used for validating that requirements are met. Finally, plans must be developed and action taken on these plans to improve the ability of the suppliers and partners to aid the organization in attaining performance goals. Such plans and actions may include:

- Improving the organization's procurement and supplier management processes (through the use of feedback from suppliers and internal customers.

- Adjusting supplier selection with the goal of reducing the number of suppliers and enhancement of partnership agreements
- Joint Planning
- Rapid information and data exchanges
- Use of benchmarking and comparative information
- Customer-Supplier teams
- Providing training to suppliers and partners
- Long-term agreements
- Incentives
- Recognition

Links:

- Leaders at all levels who interact with suppliers and partners are responsible for helping them attain systematic improvement of performance on key indicators and that they operate in a way that is consistent to the organizations commitment to the public, including regulations.
- Goals deployed through the key supplier chain, are used to drive improved supplier performance in critical areas.
- Problems and issues with supplier performance are used to aid in identifying and prioritizing benchmarking targets. Benchmarking and comparison data are used for the improvement supplier performance initiatives.

- Data is analyzed to aid in the improvement of supplier and partner work processes and performance.
- Improved supplier performance can be instrumental for the improvement of work processes.
- Improved supplier processes leads to better supplier performance and maybe better financial performance.
- Financial and market results are enhanced by improvements in product and service processes, support processes, and supplier and partner processes.

Effective Practices:

- Performance requirements are clearly and measurably defined and communicated to suppliers
- Supplier selection is driven by measurable performance characteristics of the supplier's capabilities to attain and exceed high levels of performance excellence as opposed to price.
- Expected supplier performance measures are in place.
- Data on supplier and partner performance is routinely made available to suppliers to allow for the rapid adjustment and improvement in performance.
- The organization maintains a system to review and improve its own procurement processes and methods for communication with and selection of supplier.

- Procedures exist to improve supplier and partner performance (fewer defective parts, rework, etc.) including training and certification programs. The organization systematically helps key suppliers make improvements to their performance and capabilities. In addition, this information is shared throughout the organization.
- Improvements in the internal performance systems of suppliers and partners are undertaken to reduce unnecessary costs such as incoming inspection and audits.

(Blazey, 1999)

Baldrige Criteria Improvement Validation Through SCOR

Figure 16 Illustrating the progression of Improvement supply chain initiatives and SCOR best practices

When compared to most of the other classification areas, the Improvement classification doesn't possess a great number of initiatives from the Baldrige Criteria or best practices from the SCOR model. However, given the Criteria's propensity for advocating "breakthrough improvement" and innovation the initiatives within

Improvement are necessary for complete validation of the Baldrige Criteria as a source of supply chain best practices.

Like the Baldrige Criteria, the SCOR model has limited representation of best practices within the Improvement classification. Even so, these supply chain best practices are no less important than others given their connections to other best practices. *Reliable continuous improvement process and methodology* is an important best practice for the SCOR process, manage supply chain performance. *Continuous improvement and development* is a similar best practice that must be driven and measured through the performance review process. Data Analysis has a strong influence within this classification. The data and information collected is used as the primary driver for and proof of improvement in the Baldrige Criteria. *Supplier development programs* provide an obvious link between Collaboration and Improvement. SCOR Model version 9.0 introduced the best practice *optimize supply chain process* as a way to help attend to the SCOR Model process, manage supplier agreements (Supply Chain Council, 2010).

The Improvement classification is not as highly represented as the other classifications but it plays a vital role in the Baldrige Criteria. However, the concept of striving for improvement is evident in initiatives and best practices within other classifications, namely Planning, Data Analysis, and especially Collaboration. In fact, during the early years, the Baldrige Criteria showed its strongest propensity toward the Improvement classification. Many improvement efforts are strongly evident within the Collaboration classification. It appears that the majority of "would-be" improvement initiatives can be found here. The Collaboration classification analysis proves this to be true along with the observed trends in Collaboration and Improvement initiative scoring.

Deployment Supply Chain Initiatives

1991 Baldrige Criteria Deployment

Quality goals and plans begin with a list of quality improvement goals and how they will be attained by the work units in the organization. Performance indicators and measures/indices used to gauge quality and ascertain progress must also be included. Following the summary of this initiative, the methods used for deployment of these goals to suppliers should be presented.

Indicators:

- Evidence plans are effectively deployed to suppliers.

(Graham, 1991)

1995 Baldrige Criteria Deployment

Strategy deployment has its foundation rooted in a company's vision over the next few years relative to its products and/or services. An understanding and presentation of what will happen in the industry and what is needed for success in that industry is of concern. Once this is determined, the business drivers must be identified and the translation of these drivers into specific plans presented. How these plans and goals are deployed to suppliers so they can be effective in helping to reach goals is important here. Disconnects here are typical, so explanations and examples of connections between goals and the creation of supplier requirements are necessary (Graham, 1995).

1996 Baldrige Criteria Deployment

Strategy deployment requires information on the company's key business drivers and how the drivers are translated into an action plan. This includes defining key

performance requirements, alignment of work unit, supplier, and partner plans, and the principal resources dedicated to the accomplishment of plans (Blazey, 1996).

1999 Baldrige Criteria Deployment

Organizational performance review deals with the leaders' role in reviewing overall organizational performance. This is vital because reviews lead to consistency behind goals and allocation of resources. The hope is for an organization that is flexible and responsive so that it can effectively adapt to new needs and opportunities. Such organizational reviews must be converted into an action agenda specific enough to be deployed throughout the organization and to suppliers/partners and key customers.

Links:

- Leaders at all levels have the responsibility of ensuring an environment that manifests high performance which includes tracking processes for design and delivery, support services, and better supplier and partner performance. Leaders must make sure design, production/delivery, support, and supplier performance processes are aligned consistently examined and adjusted as needed.
- Information about supplier performance is necessary to the design and implementation of new, modified, or customized products and services.

Action plan development and deployment is focused on how the action plans are developed and deployed. Included is an explanation of key performance requirements and measures, as well as work unit, supplier, and/or partner plans. Primary importance is how alignment and consistency are accomplished for key processes and key measurements. Without effective alignment, sub-optimization can result.

Customer relationships deal with how the organization effectively manages it interaction and follow-up with customers. Relationships provide a potentially important avenue for organizations to understand and manage customer expectations to develop new business. Employees in contact with customers may provide important information to build partnerships and other long term relationships with customers. Organizations need to establish customer contact required to meet the needs of its customers for service. These customer contact requirements must be deployed to all employees in contact with the customers. Such deployment must involve all key points in the response chain. Such standards serve as a source of information to examine the organization's performance in meeting customer contact requirements (Blazey, 1999).

2003 Baldrige Criteria Deployment

Organizational performance review observes how leaders review organizational performance in a disciplined, factual manner, the key performance measures they routinely review, and how findings attained from these reviews are utilized to drive improvement and innovation. Leaders are responsible for formulating a consistent process to convert review findings into an action agenda that is sufficient enough for deployment throughout the organization and to suppliers and partners that need to take action for improvement.

Links:

- Leaders ensure strategic objectives balance the needs of key stakeholders.
- Leaders must ensure that design, production/delivery, support, and supplier performance processes are aligned and consistently evaluated and refined.

Action plan development and deployment looks at how the organization translates it strategic objectives into action plans for the carrying out of those objectives. The organization must provide the key measures/indicators for tracking progress of action plans. The organization must use these measures or indicators to accomplish organizational alignment and inclusion of all work units and stakeholders. Consistency in the carrying out of action plans and corrective adjustments require resources and performance measures as well as the alignment of work unit and supplier/partner plans.

2007 Baldrige Criteria Deployment

Action development and deployment is concerned with how the organization converts its measurable, outcome oriented strategic objectives into action plans to achieve objectives and allow assessment of progress in regard to action plans. The purpose is to make sure strategies result in actions that are deployed at all levels of the organization as well as key partners, collaborators, and suppliers to align work for the achievement of goals. A well deployed and understood strategic plan helps everyone in the organization understand the difference between random acts of improvement and aligned improvement. Random improvement creates a false sense of accomplishment and rarely leads to optimum benefits for the organization. In fact, wasteful expenditures such as time, resources, and money are a typical occurrence of a strategic plan that's not aligned.

Organizational performance review is concerned with the translation of performance results into drivers for the systematic evaluation and improvement of key processes in the entire organization. Organizational alignment must be ensured through the deployment of these priorities and opportunities to suppliers, partners and collaborators. It begins with benchmarking information that can be used to support

decisions related to core competencies, alliances, and outsourcing. Leaders must construct a consistent method for translating review findings into an action agenda, with enough specificity for deployment throughout the organization as and to supplier and partners who need to take action for improvement purposes (Blazey, 2007).

2009-2010 Baldrige Criteria Deployment

Performance improvement is concerned with the results of organizational performance analysis and reviews. The results will reveal various levels of performance and aid leaders in identifying where more examination and improvement of key work processes are most needed. Leaders will be able to identify priorities and drive improvement in critical areas throughout the organization. The results of organizational-level analysis must be properly communicated by leaders to support decision making throughout the organization and as appropriate to suppliers, partners, and key customers. These decisions must also be aligned with business results, strategic objectives, and action plans. Leaders must construct a consistent method for translating review findings into an action agenda, with enough specificity for deployment throughout the organization and to supplier and partners who need to take action for improvement purposes (Blazey, 2009).

Figure 17 Illustrating the progression of Deployment supply chain initiatives and SCOR best practices

Based on this research, there appears to be a similar but less pronounced problem with the Deployment classification that was encountered with the Planning classification, but with reversed roles. While there are limited Deployment best practices in the SCOR model, there are several Deployment initiatives within the Baldrige Criteria. For this research, the process area of the SCOR model is used to try and rectify this detail.

As expected, Baldrige Criteria Deployment initiatives begin in the early days focused on quality goals and plans that evolve following the TQM era with the entrance of Performance Excellence. *Strategy deployment* is an initiative that begins with a company's forward looking vision relative to its products and services. Identification of business drivers and translation into specific plans are the objectives for execution of this initiative. The methods used for supplier deployment to ensure the absence of disconnects are necessary for proper implementation. Further evolution around the 21st century brought in the need for *organizational performance review* and its conversion into an action agenda for supply chain deployment. Closely related is *action plan development and deployment* which when done properly will lead to effective alignment

and consistency of key processes and measures. An initiative that links customer and supplier shows up as well. *Customer relationships* is primarily concerned with the determination and implementation of contact requirements to every key point on the supply chain. Organizational alignment through plan translation to action agendas are a common theme during the progression of Deployment initiatives.

Though there are few supply chain best practices in SCOR Model Deployment, there may be best practices that mirror the initiatives given in the Baldrige Critera. *Supply chain collaboration extension* necessitates that collaboration among supply chain partners extends to customers in order to span the entire supply chain. This is similar to the Baldrige initiative *customer relationships* and appears to be a best practice seeking organizational alignment that the initiative strives to achieve. *Sales and operations planning* is a best practice that has the goal of bringing all business plans together. When carried out properly, this best practice links strategic plans for the business with execution and reviews performance measurements for continuous improvements. *Integrated demand and supply planning* links demand planning, supply planning particularly supply plan execution. This planning and execution data is integrated and shared with all functional areas in an organization (Supply Chain Council, 2010).

In analyzing the SCOR model, it appears that finding other best practices that directly mirror Baldrige initiatives in the Deployment classification is basically futile. However, there are other aspects of the SCOR model that may be appropriate for consideration. The processes within the Process section give a set of pre-defined descriptions for activities many companies carry out in order to properly execute their supply chains with the primary objective to fulfill customer orders. Processes tend to be

less specific than best practices. In fact, SCOR best practices represent more specific activities that the SCOR model prescribes for the success of SCOR processes. "Execution" is closely related to words this part of the research is interested in such as "deployment" and "implementation". Furthermore, SCOR model processes have inputs and outputs. This fact lends credibility to processes as the SCOR models approach to addressing deployment of or action taken on inputs for the purpose of producing the outputs the model proposes (Supply Chain Council, 2010).

In looking at processes within the SCOR model, manage business rules for plan process is concerned with establishing, maintaining, and enforcing decision support criteria for Supply Chain Planning which translate to rules for conducting business. Business rules align plan process policies with business strategy, goals, and objectives. Service levels are an output for this process that serve as performance targets in service related measures such as delivery performance and lead times. Service levels must be evaluated against the input service requirements. Service levels are the result of a balance between service requirements and operational strategy. Manage performance of supply chain involves the process of measuring integrated Supply Chain performance against internal and/or external standards to develop and implement methods to achieve targeted performance levels. Performance targets established for supply chain execution of processes are depicted in process elements for plan. Manage sourcing business rules is a process in which defining requirements and establishing, maintaining, and enforcing decision support criteria that is aligned with business strategy, goals, and objectives. Business strategy defines the criteria for sourcing business rules that are translated into guidelines and policies for conducting business within the organization and other legal

entities (Supply Chain Council, 2010). Though similarities are present, there appears some difficulty in directly relating some of the SCOR processes to the Baldrige initiatives. Even so, the Deployment classification has provided the final area that supports the case that the Baldrige Criteria is not just a document with random supply chain initiatives thrown in but a respectable supply chain best practice model.

CHAPTER VI

SUMMARY AND CONCLUSION

The Baldrige Criteria for Performance Excellence has long been respected as an instrument for organizational evaluation to lead to superior industry practice. Competiveness in a dynamic world was the primary catalyst for its creation. The Baldrige Criteria's roots can be found in total quality management during the days where the United States was attempting to create a tool to aid in attending to organizational issues which led to industry performance that fell behind competing foreign countries, particularly Japan. The emphasis on quality promotion across the United States and the Baldrige Award's acclaim for its ability to remedy quality issues cannot be understated as was seen through its utilization as a self-assessment tool. Though created for application to any business, it first excelled in manufacturing and grew over the years to become useful for service companies, non-profits, and other entities. The Baldrige Criteria has endured intense scrutiny by experts and studies aimed at derailing its legitimacy. In addition, it has withstood and adjusted to multiple shifts in emphasis to remain a relevant blueprint for organizational stability without stalling due to fads. The Baldrige Criteria's evolutionary abilities can be attributed to the ongoing efforts of the U.S. Department of Commerce, the National Institute of Standards and Technology, and Baldrige Award recipients. In a continued demonstration of these abilities, the Baldrige Criteria has recently adjusted to stakeholder need by shifting to a two-year revision cycle. This is

appropriate given the determination that new practices require proof of widespread practice, and two years has been determined as the cycle for such evidence.

The literature review for supply chain management provided a number of important details that are relevant for this research. A big picture of the evolution of approaches to supply chain management is the primary contribution. Before supply chain management was emphasized, mass production for unit cost minimization was the typical approach in manufacturing. A shift to material requirements planning improved the limited flexibility in new product development and highlighted the consequences of work-in-process inventory for manufacturing cost, quality, and lead time; however, supply chain management was still not in existence in American industry. Most parts were produced in-house and any outside materials and services were handled by minimally respected purchasing departments that enjoyed little visibility. Real supply chain management came to fruition through Just-In-Time and other such programs along with experimentation with strategic, cooperative supplier relationships.

The most important contribution to this research from the literature review is the research into supply chain best practices began by Kurt Salmon Associates and taken to whole new levels by the Supply Chain Council through their creation and maintenance of the supply chain operations reference (SCOR) model. This model is used as the measuring device for validating the Baldrige Criteria's ability to reflect and keep pace with supply chain best practices. Other significant inputs are the inclusion of key concepts that need to be addressed in supply chain management namely, agility, adaptability, and alignment. These terms show up in the analyses conducted on the Baldrige Criteria and the SCOR model.

At the outset of this research, two high level management areas, quality and the supply chain, were the focus. The evolution of the Baldrige Criteria brought about a shift in research focus with a more organization-wide focus that extended outward throughout the supply chain to multiple stakeholders including suppliers, partners, and customers. From its early years during the total quality management era to the evolution of the Performance Excellence era, the goal has always been to create and maintain a robust tool that can be implemented to give organizations the ability to create and sustain ongoing success. An extremely relevant area when considering organizational success was, and continues to be, supply chain management.

This research has an overarching goal, which is to present work that is useful in validating the Baldrige Criteria as a model of supply chain best practices. This is done by thorough analysis of the Baldrige Criteria and the SCOR model. This work involved extracting supply chain elements contained in the BC, and classifying these elements into six broad areas, namely Planning, Data Analysis, Communication, Collaboration, Improvement, and Deployment. This classification scheme, which is based on well-recognized management functions, enables us to better understand and track how the SCM elements in the BC have evolved through the life of the Baldrige Program. Additionally, we have used the Baldrige Criteria's scoring system to estimate the relative focus of the Criteria on each area of SCM emphasis. Within the snapshot analyses, the radar charts have been used to give easy visual representation of classification emphases and any shifts that occur. Connections among the six areas of SCM emphasis have also been highlighted. Other charts were also used to give visual representations of the data for clarifications and big picture analysis. In addition, the SCOR reference model was

utilized as a respected source of supply chain best practices for proper validation of the Baldrige Criteria's status as a source of supply chain best practices. The snapshot analysis gave insight into the Baldrige Criteria and SCOR model by showing the types and volume of initiatives represented in each tool and the respective classifications. Observations were noted concerning these snapshots and generalized conclusions and queries formulated for further exploration.

There were a few takeaways and areas for further inquiry that came about as a result of the snapshot analysis. First and foremost, when looking at both documents, the SCOR contains a large volume of supply chain best practices, whereas the Baldrige Criteria contains a substantially lower amount of supply chain initiatives with certain initiatives being brought in while others are cycled out or moved around. This is due to the Criteria's approach to striving to evolve for continued relevancy and present a more direct path to performance excellence. The SCOR appears to aim more for amassing an archive of best practices to attend to every possible type of supply chain and leave deciding on which best practices are most appropriate to the organization. The shift of the Baldrige Criteria to a more all-inclusive performance excellence approach is notable because it falls in the same time frame as the creation of the SCOR model. TQM had grown during this time but out of that growth a large amount of criticism was manifested which the Baldrige Criteria appeared to rightly take seriously. The change came in response to companies in industry struggling in spite of exceptional levels of customer satisfaction and quality. This new less prescriptive focus used a "look back" method where approaches substantiated based on the results to allow companies to adapt approaches for their organization and culture. The opening of information and

communication avenues for the parties involved is one of the great accomplishments of the Baldrige Criteria at this juncture.

For the most part, only general observations could be ascertained when comparing the Baldrige Criteria and SCOR model. Both tools include benchmarking items within the Data Analysis classification and place substantial emphasis on Data Analysis and Collaboration. The Baldrige Criteria places limited emphasis on Planning while SCOR has a substantial amount of Planning best practices. Improvement is also given limited emphasis in SCOR and the Baldrige Criteria in recent years, an obvious shift from its early TQM years.

The classification analysis explores deeper into both the Baldrige Criteria and SCOR model to extract details needed for this research. What becomes readily apparent is that though each classification tells its own stories, the connections among these classifications are unavoidable. Planning receives limited emphasis in the Baldrige Criteria because of its correlation to and function as foundational to the other areas. This is true for the Baldrige Criteria categories as well. This foundational role is why Planning serves as the most important function of management as was discovered in the Methodology. Conversely, the SCOR model's approach to Planning is quite different. Supply chain best practices by volume keep pace with Data Analysis for the second most supply chain items in the SCOR model. However, in looking at these best practices and their descriptions, their collaborative nature cannot be ignored.

Data Analysis lines up extremely well within the Baldrige Criteria and SCOR model and includes items concerned with benchmarking, performance review, measures,

and other comparative data. Consistent high emphasis is seen within the SCOR model and Baldrige Criteria from the quality era throughout the performance excellence era.

Communication, which is the flow of the gathered information discussed above, is very technologically based when looking at the Baldrige Criteria and SCOR model. EDI is likely the most significant contribution from Kurt Salmon Associates. For the Baldrige Criteria, beyond effective technology, most of the details are concerned with ensuring communicated data possesses certain qualities including completeness, reliability, accuracy, timeliness, and security. This area is obviously extremely important for Collaboration, the leading classification area. Integrity and supply chain visibility are goals of Collaboration that must be implemented through effective communication. In spite of this close relationship, Communication maintains respectable emphasis throughout the Baldrige Criteria's existence, dropping out for a short period and returning at moderate levels. The drop out can be attributed to the Baldrige Criteria's refocusing in response to the report "The Nation's CEO's Look to the Future." Globalization and Process Management for a competitive advantage due to flexibility are a couple of the largest emphases noted by CEO's as key going forward. This led directly to the inclusion of more process oriented initiatives for more collaborative relationships. During this realignment, the Communication initiatives were merged into the Collaborative process initiatives that enter the Baldrige Criteria during this time. They reenter around the 2003 Baldrige Criteria when further refocusing occurred including increased focus on governance and ethics and the need for the leveraging of knowledge assets which led to the inclusion of a couple of initiatives that attend to these areas.

While every classification area is important, Collaboration is most important for the research goal of validating the Baldrige Criteria for a number of reasons. This research points to the bulk of supply chain initiatives and best practices being affiliated with Collaboration. Furthermore, the majority of the evolution within the Baldrige Criteria has been in this area as can primarily be seen by the points allocated to this area in recent years. Two of the questions created concerning the limited emphasis on Planning and Improvement are answered within Collaboration. The general nature of the Planning supply chain initiatives don't allow for clear validation of the Planning area. Through the SCOR model Planning best practices that serve a dual role as Collaboration best practices, this research is able to clarify this issue. The ability to tie Collaborative supply chain initiatives to Planning/Collaborative SCOR best practices fill in evident validation gaps in the research. In addition, Improvement is an initiative that is well represented in early years of the Baldrige Criteria. But, as time passes, this classification falls out. Again, in looking at the Baldrige Criteria's approach, Collaboration and Data Analysis absorb Improvement initiatives over time. The message here is that the Baldrige Criteria evolves to deal with improvement endeavors through collaborative efforts that are depicted through trends analysis. Within the SCOR model not only are most of its best practices retained in the Collaboration area, but the most repeated initiatives are in this area. This illustrates how connected Collaboration is to other areas, especially Planning.

Deployment is represented as the "take action" classification area. This is where Planning is put into action. Beyond this are customer-focused initiatives to deal with potential disconnects in the supply chain. Alignment and consistency are primary goals

within the many initiatives over this classification's evolution. This area commands significant emphasis throughout the Baldrige Criteria's existence and rounds out our classification areas nicely.

The classification analysis presents an involved examination of Baldrige supply chain initiatives in relation to SCOR supply chain best practices. The classification analysis provided the information necessary for determining how the Baldrige Criteria measures up as a source of supply chain initiatives that represent supply chain best practices. Though the SCOR model contains substantially more supply chain best practices, the analysis was able to directly relate the majority of the supply chain best practices concepts the SCOR model promotes to the Baldrige Criteria's supply chain initiatives. It is as a result of this analysis that the Baldrige Criteria can be affirmed as a relevant source of supply chain best practices. In fact, given the literature review, only the SCOR model appears to be a better representative of consistent and thorough supply chain best practice in the supply chain and supply chain management era.

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APPENDIX A

GLOSSARY

Action Plans- a sequence of steps that must be taken, or activities that must be performed properly for a strategy to be successful

Adaptability- ability of an organization to alter itself or its responses to the changed circumstances or environment. It shows the ability to learn from experience and improve

Agility- the ability for companies to remain competitive in their industry by adjusting and adapting to new innovative ideas and using these ideas to create new products and services as well as new business models

Alignment- linking of organizational goals with other goals within a supply chain

Analysis- examination of data to reveal and understand cause-effect relationships in order to provide a basis for problem solving and decision making

Benchmarking- a measurement of the quality of an organization's policies, products, programs, strategies, etc., and their comparison with standard measurements, or similar measurements, or similar measurements of its peers

Best Practice- a method or technique that has consistently results superior to those achieved with other means and that is used as a benchmark

Categories- the various areas in the Baldrige Criteria used for examination; scoring is broken down and allocated to these areas

Classifications (define the areas)- the engineering management concepts used to organize the supply chain initiatives extracted from the Baldrige Criteria

Collaborator- entity within or outside a supply chain that works with another entity (or entities) within a supply chain in a non-binding arrangement where gains/losses and risks/rewards may or may not be shared

Company- term used in this research(as well as the Malcolm Baldrige Criteria) to refer to the entity seeking to earn the Malcolm Baldrige Award

Connections-see Linkages

Core competencies- unique abilities a company attains from its founders or develops that are difficult to copy. Such abilities give a company competitive advantages in their industry

Criteria-refers to the Malcolm Baldrige Criteria

Data- information in raw or unorganized form that refers to or represent, conditions, ideas, or objects; data is limitless and present everywhere

Distributor- an entity that buys noncompeting products or product lines, stores them, and resells them to retailers, the end users, or customers

Flexibility- the ability of a system, such as a manufacturing process, to cost effectively vary its output within a certain range and given timeframe

Goal- anything that's measured such as revenue, customer satisfaction, productivity, and quality; Goals determine how you fulfill an objective

Indicator- measurable variable used as a representation of an associated (but non-measured or non-measurable) factor quantity

Indices- statistical devices that summarize a collection of data in a single base figure

Information- data that has been verified to be accurate and timely; is specific and organized for a purpose; is presented in such a way as to give it meaning and relevance; and can lead to an increase in understanding and decrease uncertainty

Information systems- a combination of hardware, software, infrastructure and trained personnel organized to facilitate planning, control, coordination, and decision making in an organization

Integration- process of attaining close and seamless coordination between several departments, groups, organizations, systems, etc.

Knowledge management- Strategies and processes designed to identify, capture, structure, value, leverage, and share an organization's intellectual assets to enhance its performance and competitiveness. The two critical activities for carrying this out are: (1) capture and documentation of explicit and tacit knowledge (2) dissemination within the organization

Leadership- the activity of leading a group of people or an organization, or the ability to do so; in an organizational role it involves the establishment of a clear vision, sharing of that vision with others so that they will follow, provision of the information, knowledge, and methods to realize that vision, and coordinating and balancing the conflicting interests of all members or stakeholders

Linkages- relationships and interactions between tasks, functions, departments, and organizations, that promote flow of information, ideas, and integration in achievement of shared objectives

Logistics- planning, execution, and control of the procurement, movement, and stationing of personnel, material, and other resources to achieve the objectives of delivering a product or service to a customer in such a way that finds the best way balance costs and speed

Manager- individual in charge of a certain group of tasks or a certain subset of a company

Measures- act of quantifying values into meaningful standardized units

Measurement- quantifying values into specific units to make them meaningful

Mission- the overall function of an organization, i.e. what it intends to accomplish

Objective- a high level achievement that serves as the focus of the strategic plan;

Organization- term used in this research(as well as the Malcolm Baldrige Criteria) to refer to the entity seeking to earn the Malcolm Baldrige Award

Partner- entity within a supply chain that unites with another entity (or entities) within a supply chain in a binding (likely contractual) arrangement where gains/losses and risks/rewards are shared; such arrangements should work toward a common goal typically focusing on pleasing the customer

Performance Excellence- a concept focused on business results that fall into five broad categories that must be addressed: Customer focus(includes customer satisfaction and product/service quality), Financial and Market, Human Resource, Supplier and Partner, and Organizational Effectiveness

Process Management- administrative activities directed toward defining process, establishing responsibilities, evaluating process performance, and identifying opportunities for improvement

Process- sequence of interdependent and linked procedures which, at every stage, consume one or more resources to convert inputs into outputs

Procurement- the process of obtaining goods and services from preparation and processing of a requisition through to receipt and approval of the invoice for payment

Quality- In manufacturing, a measure of excellence or state of being from defects, deficiencies, and significant variations, brought about by strict and consistent adherence

to measurable and verifiable standards to achieve uniformity of output that satisfies particular customer and user requirements

Relationships-see Linkages

Requirements- constraints, demands, necessities, needs, or parameters that must be met or satisfied, usually within a certain timeframe

Response Chain-See Supply Chain

Results- outcome, consequence, or conclusion of a problem, analysis, or experiment

Stakeholder- a person, group, or organization that has direct or indirect stake in a an organization because it can affect or be affected by the organization's actions, objectives, and policies

Strategy- a method or plan used to bring about a desired future such as achievement of a goal or solution to a problem

Supplier- a party that supplies goods or services

Supply Chain- whole network of entities, directly and indirectly connected interdependently for the purpose of serving the same consumer or customers. It consists of vendors that provide raw material, producers who convert material into products, warehouses for storage, distribution centers that deliver to retailers, and finally retailers who get the products to the ultimate customer

Supply Chain Management- the management of material and information flow in a supply chain to provide the highest degree of customer satisfaction at the lowest achievable cost

Supply Chain Initiative- in this research, any action or matter a company/organization undertakes for the purpose of winning the Malcolm Baldrige Award that is concerned with the supply chain

Trends- a pattern of gradual change in a condition, output, or process, or an average or general tendency of a series of data points to move in a certain direction over time, represented by a line or curve on a graph

Value Chain- See Supply Chain

Values- the guiding principles and behaviors that embody how an organization and its people are expected to operate

Vendor- see Supplier

Vision- the desired future state of the organization; i.e. the direction in which it's headed, what it strives to be, or its desired perception in the future

GLOSSARY RERERENCES

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APPENDIX B

DETAILED BALDRIGE CRITERIA SUPPLY

CHAIN INITIATIVE TABLES

Table 20 Description of Supply Chain Initiatives contained in the 1988 Baldrige Criteria

Data Analysis	**Description**	**Page**	**Part**	**Est. Points**
Supplier quality and data analysis	Supplier knowledge of and success in meeting corporate quality goals and plans, recent performance, info relevance and use for qip and procurement, awareness of expected and actual performance, analysis appropriateness, criteria and award programs, assistance efforts, education and training programs on new quality technology, consequences of success and failure	24	2.4	10
Distributor and/or dealer quality data and analysis	Distributor knowledge of and success in meeting corporate quality goals and plans, relevance of info collected for allocation, sales, and franchise decisions; degree of sharing data and quality improvement techniques, analysis appropriateness, involvement of company in distributor quality processes, consequences of qip failure and success	24	2.5	10
Auditing	Info about process capability studies by the company, suppliers, or distributors	34	5.6.1 e	3
Communication	**Description**			
External communication of qip data	Quality improvement process and results information being communicated to suppliers, distributors and customers	21	1.5.1 a	2
Collaboration	**Description**			
Recognition systems	Inclusion of suppliers and distributors in recognition programs	29	4.4.2 f	2.5
Deployment	**Description**			
Supplier/user concepts	Application of supplier/user concepts between departments	20	1.3.2 b	3.75

Table 21 Description of Supply Chain Initiatives contained in the 1989 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Company process planning for quality improvement	Inclusion of suppliers, distributors, and other external providers in planning and plans; plans affect on suppliers and distributors, and other external providers	22	3.1.1 c., 3.2.2 b.	6.5
Data Analysis	**Description**			
Management, evaluation and planning of quality	Scope of data for customers and suppliers	21	2.1.1 a.	12.5
Design considerations	Ensure compatibility of design, supplied parts and services, manufacture, sales, service	25	5.1.1 e	5
Communication	**Description**			
Senior management involvement	Accessibility to and contact with suppliers. Communication of quality excellence outside the company to suppliers and customers	19	1.1 d. e.	12
Extension of quality leadership externally	Promoting quality awareness and teaching quality techniques to suppliers and customers	20	1.4.1 a.	5
Collaboration	**Description**			
Quality improvement team participation	Teams involving suppliers and external groups as needed	23	4.2.1 c.	3.3
Education and training	Use of education and training by suppliers, customers, and other external groups	24	4.3.1 f	5
Quality assurance	Verification that company quality requirements are met by suppliers, distributors, and other external providers; selection, relationships, audits, inspections, recognition programs, training, assistance	27	5.7.1 b	6.25
Improvements	**Description**			
Quality improvement	Focus on awards company suppliers received and role company played in improvements	28	6.2.2 c	10

Table 22 Description of Supply Chain Initiatives contained in the 1990 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Supplier planning data	Supplier data used for planning and feasibility evaluation	26	3.1 b.	5.5
Supplier planning input	How suppliers and customers contribute to planning	26	3.1 d.	5.5
Data Analysis	**Description**			
Scope and management of quality data and info	Scope and type of supplier quality data	25	2.1 b.	11
Quality trends	Trends in key indicators of quality supplies and services in terms of company key requirements and actions to improve supplier quality	32	6.4 a. b.	20
Communication	**Description**			
Senior executive leadership	Leadership and involvement in meeting with suppliers and customers	24	1.1 a.	7
Collaboration	**Description**			
Quality priorities	How the company will ensure that suppliers are able to meet its quality requirements	26	3.3 c.	6.25
Teams with supplier involvement	Approaches to group participation like teams and involvement of suppliers and customers	27	4.2 a.	8
Quality assurance	Verification that company quality requirements are met by suppliers, distributors, and other external providers; selection, relationships, audits, inspections, recognition programs, training, assistance	27	5.7.1 b	6.25
Supplier awards and recognition	Highlight awards and recognition of suppliers and role company played in quality improvement	32	6.4 c.	10
Logistics support	Logistics(infrastructure) support to enable customer contact employees to provide effective and timely customer service	33	7.2 f	3
Improvements	**Description**			
Supplier quality requirements	Determination of requirements like supplier quality improvements	26	3.1 e	5.5
Quality assessment	How assessment findings are translated into improvements such as processes, practices, training, and supplier requirements	30	5.4 c	3.75
Supplier quality improvement	Strategy and efforts to improve quality and responsiveness of suppliers	31	5.7 b	10
Quality improvement trends	Focus on awards company suppliers received and role company played in improvements	28	6.2.2 c	10
Deployment	**Description**			
Supplier quality requirements	How specific requirements are deployed to suppliers	26	3.1 f.	5.5

Table 23 Description of Supply Chain Initiatives contained in the 1991 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategic quality planning process	Supplier capabilities use in developing plans and evaluating feasibility based on goals	9	3.1 b	2
Data Analysis	**Description**			
Scope and management of quality data and info	Criteria, scope and type of supplier quality data	7	2.1 a.	6.5
Competitive benchmarking	Supplier performance	8	2.2 b	2
Quality trends	Trends in key indicators of quality supplies and services and in terms of company key requirements and actions to improve supplier quality	15	6.3 a.	20
Benchmarking supplier quality results	Comparison of company's supplier quality with competitors and/or benchmarks	15	6.3 b.	20
Communication	**Description**			
Supplier quality communication	Approaches to defining and communicating of quality requirements to suppliers	14	5.7 a	6.5
Supplier quality assurance	Verification that company quality requirements are met by suppliers, distributors, and other external providers; selection, relationships, audits, inspections, recognition programs, training, assistance	14	5.7. b	6.5
Collaboration	**Description**			
Senior executive leadership	Leadership and involvement in meeting with suppliers and customers	6	1.1 a.	13.3
Design and intro of quality products/services	Review and validation of designs based on supplier capability and future requirements	12	5.1 b.	4
Improvements	**Description**			
Supplier quality assessment	Conversion of assessment findings into requirements such as supplier improvements and how company verifies improvement effectiveness	13	5.4 b	7.5
Supplier quality improvement	Strategy and actions for improving quality and responsiveness of suppliers, may include partnerships, training, incentives, recognition and supplier selection	14	5.7 c.	6.5
Deployment	**Description**			
Quality goals and plans	Summary of key requirements and performance indicators to be deployed to suppliers	9	3.2 b.	3

Table 24 Description of Supply Chain Initiatives contained in the 1992 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategic quality co. Performance planning process	Supplier capabilities use in developing plans and strategies	16	3.1 a.	2
Data Analysis	**Description**			
Competitive benchmarking	Current scope, source, and uses of competitive benchmarking data relative to supplier performance	15	2.2 b(4)	1.5
Quality trends	Trends in key indicators of quality supplies and services and in terms of company key requirements and actions to improve supplier quality	24	6.4 a.	17.5
Benchmarking supplier quality results	Comparison of company's supplier quality with competitors and/or benchmarks	24	6.4 b.	17.5
Communication	**Description**			
Supplier quality communication	Approach to defining and communicating company quality requirements to suppliers	22	5.4 a	6.5
Quality assurance	Verification that company quality requirements are met by suppliers and how company performance data are analyzed and relevant info related to suppliers	22	5.4 b	6.5
Collaboration	**Description**			
Design and intro of quality products/services	Review and validation of designs based on supplier capability and future requirements	20	5.1 b.	4
Improvements	**Description**			
Supplier quality improvement	Strategies and actions for improving quality and responsiveness of suppliers	22	5.4 c	6.5
Quality assessment	Use of assessment findings to improve supplier requirements and verification of actions on findings and action effectiveness	22	5.5b	7.5
Deployment	**Description**			
Plan requirement implementation	Method company uses to deploy plan requirements to suppliers	16	3.1 b.	5.5
Performance plans and goals deployment	Outline of company principal short-term quality and company performance plans and goals; summary of key requirements and key performance indicators deployed to work units and suppliers	16	3.2 b(1)	3

Table 25 Description of Supply Chain Initiatives contained in the 1993 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategic quality co. Performance planning process	Supplier capabilities use in developing plans, strategies, and plans to address quality and customer satisfaction leadership	20	3.1 a.	2
Data Analysis	**Description**			
Scope and management of supplier quality data and info	Criteria, scope and type of supplier quality data	16	2.1 a.	2
Competitive benchmarking	Summary of scope, sources, and uses of supplier performance competitive and benchmark info	18	2.2 b.	2
Supplier quality results	Trends for indicators of supplier quality and comparison of supplier quality levels with appropriate companies and/or benchmarks	28	6.4	35
Communication	**Description**			
Supplier quality communication	Approach to defining and communicating company quality requirements to suppliers	26	5.4 a	5
Collaboration	**Description**			
Design and intro of quality products/services	Review and validation of designs based on supplier capability and future requirements	24	5.1 a	4
Quality assurance	Verification that company quality requirements are met by suppliers and how company performance data are analyzed and relevant info related to suppliers	26	5.4 b	5
Improvement	**Description**			
Procurement activities	Use of feed from suppliers to evaluate and improve its procurement activities	26	5.4 c.	5
Quality requirements	Use of plans and actions to improved suppliers' abilities to meet key quality and response time requirements	26	5.4 d	5
Quality assessment	Use of assessment findings to improve supplier requirements and verification of actions on findings and action effectiveness	26	5.5 b	7.5
Deployment	**Description**			
Plan implementation	Method company uses to deploy plan requirements to suppliers	20	3.1 c.	4.5
Quality and performance plans	Deployment of a summary of key requirements and operational performance indicators to suppliers	20	3.2 b.	3

Table 26 Description of Supply Chain Initiatives contained in the 1994 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategic quality co. Performance planning process	Supplier capabilities use in developing plans, strategies, and plans to address quality and customer satisfaction leadership	18	3.1 a.	2
Data Analysis	**Description**			
Scope and management of quality data and info	Criteria, scope and type of supplier quality data	16	2.1 a.	2
Competitive benchmarking	Summary of scope, sources, and uses of supplier performance competitive and benchmark info	16	2.2 b.	2
Supplier quality results	Trends for indicators of supplier quality and comparison of supplier quality levels with appropriate companies and/or benchmarks	28	6.4	35
Communication	**Description**			
Supplier quality communication	Approach to defining and communicating company quality requirements to suppliers	26	5.4 a	5
Collaboration	**Description**			
Design and intro of quality products/services	Review and validation of designs based on supplier capability and future requirements	23	5.1 b	4
Quality assurance	Verification that company quality requirements are met by suppliers and how company performance data are analyzed and relevant info related to suppliers	26	5.4 b	5
Improvements	**Description**			
Procurement activities	Use of feedback from suppliers to evaluate and improve its procurement activities	26	5.4 c.	5
Quality requirements	Use of plans and actions to improve suppliers' abilities to meet key quality and response time requirements while minimizing inspection, auditing, testing to eliminate costs	26	5.4 d	5
Quality assessment	Use of assessment findings to improve supplier requirements and verification of actions on findings and action effectiveness	26	5.5 b	7.5
Deployment	**Description**			
Plan implementation	Method company uses to deploy plan requirements to suppliers	18	3.1 c.	4.5
Quality and performance plans	Deployment of a summary of key requirements and operational performance indicators to suppliers	19	3.2 b.	3

Table 27 Description of Supply Chain Initiatives contained in the 1995 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development	Supplier/partner capabilities use in developing strategies, and plans strengthen customer related, operational, and financial performance and competitive position	25	3.1 a.	2
Data Analysis	**Description**			
Supplier performance results	Trends in key measures/indicators of supplier performance. Include comparative data	35	6.3	45
Communication	**Description**			
Supplier requirements	Summary of company requirements and how they are communicated to suppliers. Includes measures/indicators of these requirements, expected performance, determination of meeting of requirements and feedback to suppliers	33	5.4 a	15
Collaboration	**Description**			
Senior executive leadership	How senior executives provide leadership and direction in building and improving company competiveness, performance, and capabilities. They must create and reinforce values and expectations throughout the company's leadership system and account for all stakeholders including suppliers and partners	21	1.1 a	1.5
Design and intro of products/services	Addressing of requirements associated with products, services, and production/delivery processes early in design by all appropriate company units suppliers and partners to ensure integration, coordination, and capability	30	5.1 a	4
Improvement	**Description**			
Supplier management	Evaluation and improvement of supplier relationships and performance; action and plans to improve suppliers' abilities to meet requirements, company procurement practices through supplier feedback, and minimizing costs(inspection, auditing, testing…)	33	5.4 b.	15
Deployment	**Description**			
Strategy deployment	Drivers derived from companies strategy and conversion to action; how the company aligns work unit and supplier/partner plans and targets	26	3.2 a	2

Table 28 Description of Supply Chain Initiatives contained in the 1996 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development	Supplier/partner capabilities use in developing strategies, and plans strengthen customer related, operational, and financial performance and competitive position	10	3.1 a.	2
Data Analysis	**Description**			
Competitive comparisons and benchmarking	How competitive comparisons and benchmarking information and data are selected and used to help drive improvement of overall company performance	8	2.2 a	4
Supplier performance results	Trends in key measures/indicators of supplier performance. Include comparative data	20	6.4	30
Communication	**Description**			
Supplier requirements	Summary of company requirements and how they are communicated to suppliers. Includes measures/indicators of these requirements, expected performance, determination of meeting of requirements and feedback to suppliers	18	5.4 a	15
Collaboration	**Description**			
Senior executive leadership	Describes how senior executives create future opportunity for the company and its stakeholders	6	1.1 a(2)	7
Design and intro of products/services	Addressing of requirements associated with products, services, and production/delivery processes early in design by all appropriate company units suppliers and partners to ensure integration, coordination, and capability	15	5.1 a	4
Improvement	**Description**			
Supplier management improvement	Evaluation and improvement of supplier relationships and performance; action and plans to improve suppliers' abilities to meet requirements, company procurement practices through supplier feedback, and minimizing costs(inspection, auditing, testing…)	18	5.4 b.	15
Deployment	**Description**			
Strategy deployment	Drivers derived from companies strategy and conversion to action; how the company aligns work unit and supplier/partner plans and targets	11	3.2 a	2

Table 29 Description of Supply Chain Initiatives contained in the 1997 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development	Supplier/partner capabilities use in developing strategies, and plans strengthen customer related, operational, and financial performance and competitive position	6	2.1 a.	4
Data Analysis	**Description**			
Supplier and partner results	Trends in key measures/indicators of supplier and partner performance. Include company cost/performance improvements attributed to suppliers/partners	18	7.4 a	25
Collaboration	**Description**			
Process design	How supplier and partnering processes are designed to meet performance requirements; included selection of partners and suppliers	16	6.3 a(1)	6.5
Quality assurance	How company ensures quality requirements are met; includes performance expectations and how info relayed to suppliers and partners	16	6.3 a(2)	6.5
Improvement	**Description**			
Management improvement	How company evaluates and improves management of supplier/partner processes for better performance; actions to contribute to company goals, minimize costs, and enhance supplier/partner knowledge of company needs and ability to respond	16	6.3 a(3)	6.5
Deployment	**Description**			
Strategy deployment	Translation of strategy into action plans including clear communication and alignment of critical requirements and performance tracking	6	2.1 b	4
Company performance	Review of company performance and capabilities, translation into improvement priorities and deployment to suppliers/partners	11	4.3 b	10

Table 30 Description of Supply Chain Initiatives contained in the 1998 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development process	Diagram of strategy development process that takes supplier/partner capability into consideration	7	2.1 a(6)	6.5
Data Analysis	**Description**			
Supplier and partner results	Trends in key measures/indicators of supplier and partner performance. Include company cost/performance improvements attributed to suppliers/partners	18	7.4 a	25
Collaboration	**Description**			
Process design	How supplier and partnering processes are designed to meet performance requirements; included selection of partners and suppliers	16	6.3 a(1)	6.5
Quality assurance	How company ensures quality requirements are met; includes performance expectations and how info relayed to suppliers and partners	16	6.3 a(2)	6.5
Improvement	**Description**			
Management improvement	How company evaluates and improves management of supplier/partner processes for better performance; actions to contribute to company goals, minimize costs, and enhance supplier/partner knowledge of company needs and ability to respond	16	6.3 a(3)	6.5
Deployment	**Description**			
Strategy deployment	Translation of strategy into action plans including clear communication and alignment of critical requirements and performance tracking	6	2.1 b	4
Company performance	Review of company performance and capabilities, translation into improvement priorities and deployment to suppliers/partners	11	4.3 b	10

Table 31 Description of Supply Chain Initiatives contained in the 1999 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development	Supplier/partner capabilities collection, analysis, and consideration for strategic planning process; objectives response to this factor	12	2.1 a.(2) b	5
Data Analysis	**Description**			
Measurement of organizational performance	How do you address the major components of an effective performance measurement system	16	4.1 a	6
Supplier and partner results	Trends in key measures/indicators of supplier and partner performance. Include company cost/performance improvements attributed to suppliers/partners	18	7.4 a	25
Collaboration	**Description**			
Senior leadership direction	How do senior leaders set, communicate, and deploy organizational values, performance expectations, and a focus on creating and balancing value for customers and other stakeholders	10	1.1 a(1)	10
Ethical practices	How do you ensure ethical business practices in all stakeholder transactions and interactions	11	1.2 a(3)	6.5
Design processes	How your organization manages key product and service design processes	21	6.1 a	5.5
Supplier and partnering processes	How your organization manages it key supplier and/or partnering interactions and processes	23	6.3(1-4)	10
Improvement	**Description**			
Supplier and partnering processes	How business assistance/incentives are provided to suppliers/partners to aid them in improving their performance and company performance, and how you improve supplier/partner processes. Include how improvements shared throughout organization	23	6.3 a(5, 6)	5
Deployment	**Description**			
Organizational performance	Deployment of performance review findings, improvement priorities, and innovation opportunities to suppliers/partners and customers for alignment	10	1.1 b(3)	10.5
Action plan development and deployment	How do you communicate and deploy your strategic objectives, action plans, and performance measures/indictors to achieve overall organizational alignment	13	2.2 a(5)	4
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	15	3.2 a(2)	4.5

Table 32 Description of Supply Chain Initiatives contained in the 2000 Baldrige Criteria

Planning	**Description**	**Page**	**Part**	**Est. Points**
Strategy development	Supplier/partner capabilities collection, analysis, and consideration for strategic planning process; objectives response to this factor	12	2.1 a.(2) b	5
Data Analysis	**Description**			
Supplier and partner results	Trends in key measures/indicators of supplier and partner performance. Include company cost/performance improvements attributed to suppliers/partners	18	7.4 a	25
Collaboration	**Description**			
Supplier and partnering processes	What key products/services do you purchase from suppliers/partners, what performance requirements must suppliers/partners meet and how are costs minimized How company ensures performance requirements are met; includes performance measures/indictors and how info relayed to suppliers and partners in a timely manner	23	6.3 a.(1, 2,3, 4)	10
Improvement	**Description**			
Supplier and partnering processes	How business assistance/incentives are provided to suppliers/partners to aid them in improving their performance and company performance, and how you improve supplier/partner processes. Include how improvements shared throughout organization	23	6.3 a(5, 6)	5
Deployment	**Description**			
Organizational performance	Deployment of performance review findings, improvement priorities, and innovation opportunities to suppliers/partners and customers for alignment	10	1.1 b(3)	10.5
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	15	3.2 a(2)	4.5

Table 33 Description of Supply Chain Initiatives contained in the 2001 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Most important types of suppliers, dealers, and supply chain requirements; supplier and customer partnering relationships and communication mechanisms			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address supplier/partner strengths and weaknesses	14	2.1 a.(2) b	5
Data Analysis	**Description**			
Operational results	Trends in measures/indicators of supplier partner performance	28	7.4	15
Communication	**Description**			
Accessibility of data	How is needed data and info made available to suppliers and partners	19	4.2 a. 1	6.5
Collaboration	**Description**			
Production/delivery processes	Use of real time customer and supplier/partner input in managing your product and service processes; how are production/delivery processes improved and improvements shared with suppliers/partners	23	6.1 b(3, 5)	9
Business processes	Use of input from suppliers and partners to determine business process requirements; what are the performance measures/indicators used for process control and improvement use of customer and supplier feedback in managing business processes	24	6.2 a.(2, 4)	8
Deployment	**Description**			
Organizational performance	Deployment of performance review findings, improvement priorities, and innovation opportunities to suppliers/partners and customers for alignment	12	1.1 b(2)	13

Table 34 Description of Supply Chain Initiatives contained in the 2002 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Most important types of suppliers, dealers, and supply chain requirements; supplier and customer partnering relationships and communication mechanisms			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address supplier/partner strengths and weaknesses	14	2.1 a.(2) b	5
Data Analysis	**Description**			
Operational results	Trends in measures/indicators of supplier partner performance	28	7.4	15
Communication	**Description**			
Accessibility of data	How is needed data and info made available to suppliers and partners	19	4.2 a. 1	6.5
Collaboration	**Description**			
Production/delivery processes	Use of real time customer and supplier/partner input in managing your product and service processes; how are production/delivery processes improved and improvements shared with suppliers/partners	23	6.1 b(3, 5)	9
Business processes	Use of input from suppliers and partners to determine business process requirements; what are the performance measures/indicators used for process control and improvement use of customer and supplier feedback in managing business processes	24	6.2 a.(2, 4)	8
Deployment	**Description**			
Organizational performance	Deployment of performance review findings, improvement priorities, and innovation opportunities to suppliers/partners and customers for alignment	12	1.1 b(2)	13
Customer relationships	Determination of key customer contact requirements and how the vary for differing modes of access. How are the requirements deployed to all people involved in the response chain	17	3.2 a (2)	5.5

Table 35 Description of Supply Chain Initiatives contained in the 2003 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and distributors types and roles in value creation process; most important supply chain requirements; key supplier and customer partnering relationships and communication mechanisms			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	15	2.1 a. (2)	2
Data Analysis	**Description**			
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	18	3.2 a(3)	2
Organizational effectiveness results	Trends and levels in key measures of indicators of operational performance of key value creation processes and support processes through supplier/partner performance	28	7.5 a (1, 2)	30
Communication	**Description**			
Senior leadership direction	How leaders communicate organizational values, directions, and expectations to key suppliers/partners	13	1.1 a(1)	8
Accessibility of data and info	How is needed data and info made available to suppliers and partners	20	4.2 a. (1)	7.5
Organizational knowledge	How do you manage organizational knowledge to accomplish the transfer of relevant knowledge from customers, suppliers, and partners; identification and sharing of best practices	20	4.2 b(1)	7.5
Collaboration	**Description**			
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with partners	14	1.2 b.	16
Value creation process	Use of input from suppliers and partners to determine key value creation process requirements and manage value creation processes	24	6.1 a (2, 4)	16
Support processes	Use of input from suppliers and partners for determining and managing support processes	25	6.2 a. (2, 4)	16
Deployment	**Description**			
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	13	1.1 c. 3	5.5
Action plan development and deployment	How do you ensure that measurement covers all key deployment areas and stakeholders	16	2.2 a(4)	5.5
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	18	3.2 a(2)	5.5

Table 36 Description of Supply Chain Initiatives contained in the 2004 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and distributors types and roles in value creation process; most important supply chain requirements; key supplier and customer partnering relationships and communication mechanisms			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	15	2.1 a. (2)	2
Data Analysis	**Description**	**Page**	**Part**	
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	18	3.2 a(3)	2
Organizational effectiveness results	Trends and levels in key measures of indicators of operational performance of key value creation processes and support processes through supplier/partner performance	28	7.5 a (1, 2)	30
Communication	**Description**			
Senior leadership direction	How leaders communicate organizational values, directions, and expectations to key suppliers/partners	13	1.1 a(1)	8
Accessibility of data	How is needed data and info made available to suppliers and partners	20	4.2 a. (1)	7.5
Collaboration	**Description**			
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with partners	14	1.2 b.	16
Value creation processes	Use of input from suppliers and partners to determine key value creation process requirements and manage value creation processes	24	6.1 a (2, 4)	16
Support processes	Use of input from suppliers and partners for determining and managing support processes	25	6.2 a. (2, 4)	16
Deployment	**Description**			
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	13	1.1 c. 3	5.5
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	18	3.2 a(2)	5.5

Table 37 Description of Supply Chain Initiatives contained in the 2005 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and partner types, roles in work system and production, delivery and customer roles, communication and management mechanisms, role in innovation and other supply chain requirements			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	15	2.1 a. (2)	2
Data Analysis	**Description**	**Page**	**Part**	
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	18	3.2 a(3)	2
Organizational effectiveness results	Trends and levels in key measures of indicators of operational performance of key value creation processes and support processes through supplier/partner performance	28	7.5 a (1, 2)	30
Communication	**Description**			
Vision and values	Deployment of organizational vision and values to key suppliers, partners, and customers	13	1.1 a.(1)	11.5
Accessibility of data	How is needed data and info made available to suppliers and partners	17	4.2 a. 2	7.5
Collaboration	**Description**			
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with suppliers and partners	14	1.2 b.	16
Value creation processes	Use of input from suppliers and partners to determine key value creation process requirements and manage value creation processes	24	6.1 a (2, 4)	16
Support processes	Use of input from suppliers and partners for determining and managing support processes	25	6.2 a. (2, 4)	16
Deployment	**Description**			
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	18	3.2 a(2)	5.5
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	19	4.1 b. (2)	11

Table 38 Description of Supply Chain Initiatives contained in the 2006 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and partner types, roles in work system and production, delivery and customer roles, communication and management mechanisms, role in innovation and other supply chain requirements			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	17	2.1 a. (2)	2
Data Analysis	**Description**			
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	21	3.2 a(3)	2
Organizational effectiveness results	Trends and levels in key measures of indicators of operational performance of key value creation processes and support processes through supplier/partner performance	32	7.5 a (1, 2)	30
Communication	**Description**			
Accessibility of data	How is needed data and info made available to suppliers and partners	23	4.2 a. 2	7.5
Collaboration	**Description**			
Senior leadership vision and values	Deployment of organizational vision and values to key suppliers, partners, and customers	14	1.1 a.(1)	11.5
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with suppliers and partners	15	1.2 b(2).	8
Value creation process	Use of input from suppliers and partners to determine key value creation process requirements and manage value creation processes	27	6.1 a (2, 4)	16
Support process	Use of input from suppliers and partners for determining and managing support processes	28	6.2 a. (2, 4)	16
Deployment	**Description**			
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	21	3.2 a(2)	5.5
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	22	4.1 b. (2)	11

Table 39 Description of Supply Chain Initiatives contained in the 2007 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and partner types, roles in work system and production, delivery and customer roles, communication and management mechanisms, role in innovation and other supply chain requirements			
Planning	**Description**			
Strategy development process	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	18	2.1 a. (2)	2
Strategic objectives	How do you ensure that your strategic objectives balance the needs of all key stakeholders	10	2.1 b(2)	2
Data Analysis	**Description**			
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	22	3.2 a(3)	2
Process effectiveness outcomes	What are your current levels and trends in key measures or indicators of the operational performance your work systems, including work system and workplace preparedness for disasters or emergencies	33	7.5 a(1)	8
Communication	**Description**			
Communication and organizational performance	How do senior leaders communicate key decisions; how do senior leaders include a focus on creating and balancing value for customers and other stakeholders in their organizational performance expectations	15	1.1 b(1,2)	8
Accessibility of data	How is needed data and info made available to suppliers and partners	25	4.2 a. 1	7.5
Organizational knowledge management	How do you manage organizational knowledge to accomplish the transfer of relevant knowledge from customers, suppliers, and partners; identification and sharing of best practices	25	4.2 b(2)	7.5
Collaboration	**Description**			
Senior leadership vision and values	Deployment of organizational vision and values to key suppliers, partners, and customers	15	1.1 a.(1)	11.5
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with suppliers and partners	16	1.2 b (2)	16
Work process design	Use of input from suppliers and partners to determine key work process elated to core competencies	29	6.1 b. (2)	16
Work process management	Use of input from suppliers and partners for managing work processes	30	6.2 a. (2, 4)	16
Deployment	**Description**			
Action plan development and deployment	How action plans are developed and deployed throughout the organization to achieve strategic objectives; plans may be deployed to key partners, collaborators, and suppliers	19	2.2a(1)	2
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	22	3.2 a(2)	5.5
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	24	4.1 b. (2)	11

Table 40 Description of Supply Chain Initiatives contained in the 2008 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and partner types, roles in work system and production, delivery and customer roles, communication and management mechanisms, role in innovation and other supply chain requirements			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	10	2.1 a. (2)	2
Data Analysis	**Description**			
Complaint management	How are complaints aggregated and analyzed for improvement by your partners	14	3.2 a(3)	2
Process effectiveness outcomes	What are your current levels and trends in key measures or indicators of the operational performance of your work systems	25	7.5 a. 1	4
Communication	**Description**			
Accessibility of data	How is needed data and info made available to suppliers and partners	16	4.2	7.5
Collaboration	**Description**			
Senior leadership vision and values	Deployment of organizational vision and values to key suppliers, partners, and customers	7	1.1 a.(1)	11.5
Ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with suppliers and partners	8	1.2 b (2)	16
Work process design	Use of input from suppliers and partners to determine key work process elated to core competencies	21	6.1 b. (2)	16
Work process management	Use of input from suppliers and partners for managing work processes	30	6.2 a. (2, 4)	16
Deployment	**Description**			
Action plan development and deployment	How action plans are developed and deployed throughout the organization to achieve strategic objectives; plans may be deployed to key partners, collaborators, and suppliers	19	2.2a(1)	2
Customer relationships	Determination of key customer contact requirements and deployment to all employees involved in response chain	14	3.2 a(2)	5.5
Organizational performance review	Deployment priorities and opportunities to key suppliers and partners for organizational alignment	16	4.1 b. (2)	11

Table 41 Description of Supply Chain Initiatives contained in the 2009-2010 Baldrige Criteria

Organizational Profile	**Description**	**Page**	**Part**	**Est. Points**
Organizational relationships (not scored)	Supplier and partner types, roles in work system and production, delivery and customer roles, communication and management mechanisms, role in innovation and other supply chain requirements			
Planning	**Description**			
Strategy development	How relevant data are gathered and analyzed to address partner and supply chain needs, strengths, and weaknesses	10	2.1 a (2)	2
Strategic objectives	How do you ensure that your strategic objectives balance the needs of all key stakeholders	10	2.1 b(2)	2
Data Analysis	**Description**			
Measurement of customer satisfaction	How measurements enable aggregation and analysis of data for use in improvement throughout organization and by partners	14	3.2 b. 3	15
Complaint management	How do your determination methods enable aggregation and analysis of data for use in improvement throughout your organization and by your partners as appropriate	14	3.2 b(1,3)	6
Process effectiveness outcomes	What are your current levels and trends in key measures or indicators of the operational performance of your work systems	25	7.5 a. 1	4
Communication	**Description**			
Senior leadership vision and values	Deployment of organizational vision and values to key suppliers and partners	7	1.1 a. 1	11.5
Accessibility of data	How is needed data and info made available to suppliers and partners	17	4.2 a. 2	7.5
Organizational knowledge management	How do you manage organizational knowledge to accomplish: the transfer of knowledge from and to customers, suppliers, partners, and collaborators; the rapid identification, sharing, and implementation of best practices	17	4.2 a (3)	6
Collaboration	**Description**			
Legal and ethical behavior	Organizational methods for enabling and monitoring ethical behavior in interactions with suppliers and partners	8	1.2 b.	16
Key work process requirements (design)	Use of input from suppliers and partners to determine key work process requirements	21	6.1 b. 2	6
Work process management	Use of input from suppliers and partners for managing work processes	22	6.2 b.1	8
Deployment	**Description**			
Action plan development and deployment	Development and deployment of action plans to key suppliers and partners	11	2.2 a. 2	4
Performance improvement	How are priorities and opportunities deployed to suppliers and partners for organizational alignment	16	4.1 c.	15