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The Origins, Evolution and Outcomes of the Malcolm Baldrige National Quality Award

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March 22, 1998

The Union Institute, Graduate School of Interdisciplinary Arts and Sciences

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Project Demonstrating Excellence (Dissertation)

Abstract

The Origins, Evolution, and Outcomes of the Malcolm Baldrige National Quality Award

Kathleen Brush's Project Demonstrating Excellence (PDE) is a unified series of three articles, which examine the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award (MBNQA).

Abstract of Paper 1

"International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany and Japan from 1945 to 1982."

This paper is an interdisciplinary multi-country analysis of the factors that contributed to the rise in national competitiveness of Germany and Japan and the decline in the national competitiveness of the United States from 1945 to 1982, which led, in 1982, to the United States posting its first trade deficit since the Second World War (WWII). The paper analyzes historical, social, and cultural factors in Germany and Japan that resulted in government, financial

managerial, and educational policies and practices; which influenced national competitiveness in Germany, Japan, and the United States.

Abstract of Paper 2

"The Malcolm Baldrige National Quality Improvement Act: An Examination and Analysis of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987)."

This paper examines the response by the Congress to the United States posting its first trade deficit since WWII (in 1982). It details the legislative origins of the idea for a national quality award, the Congressional hearings, and other events that led to the shift in emphasis from productivity improvement to quality improvement, and to the passage of The Malcolm Baldrige National Quality Improvement Act (MBNQIA).

Abstract of Paper 3

"The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation (1987-1996)."

This paper presents an analysis of the performance of the MBNQA using two sets of primary data: (1) the MBNQIA legislation and related congressional testimony; and (2) the original documents that were provided by the winning companies, which include documents that the legislation requires each winning company to produce and make available to other United States organizations.

This paper is premised on the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation (as informed by the congressional testimony) with the observable results of the implementation of the legislation. Consistent with this premise, this paper analyzes the performance of the MBNQA by comparing the objectives and criteria contained in the MBNQIA of 1987, with the measures taken by the twenty eight companies that won the Award, from 1988 through 1996.

International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of the Developments in Germany and Japan from 1945 - 1982

Kathleen E. Brush

March 22, 1998

THE UNION INSTITUTE

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International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany and Japan from 1945 to 1982

Kathleen E. Brush

Introduction

This paper is the first in a unified series of three articles, which examines the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award. The three articles are being researched, written, and presented at scholarly conferences in partial fulfillment of the author's Ph.D. program at The Union Institute.

The first article in the series is "International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany, and Japan from 1945 to 1982." [1] The paper looks at the origins of the Malcolm Baldrige National Quality Award (MBNQA) by

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[1] Paper 1 was presented at the South Western Regional Conference of the International Studies Association in New Orleans, on March 23, 1997.

examining the international factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982. This decline in United States national competitiveness led, in 1982, to the United States posting its first trade deficit since the Second World War (WWII), which initiated a chain of events that led to the passage of the Malcolm Baldrige National Quality Improvement Act in 1987.

The second article in the series is "The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987)." [2] The paper looks at the evolution of the MBNQA by examining: the response by the Congress to the United States posting its first trade deficit since WWII (in 1982), to the United States becoming a net debtor nation, and to Japan becoming the world's largest creditor nation (both in 1985); the legislative origins of the idea for a national quality award, the Congressional hearings on the development of solutions to the United States trade deficit, and other events that led to the introduction of the National Quality Improvement Act of 1986; the introduction of the 1987 version of the Act, the related Congressional hearings, the shift in emphasis from productivity improvement to quality improvement; the amendments to the 1987 Act; and, on August 20, 1987, the passage of The

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[2] Paper 2 was presented at the 1997 annual conference of the Business and Economics Society International, in Athens, Greece, on July 19, 1997.

Malcolm Baldrige National Quality Improvement Act.

The third article in the series is "The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation (1988-1996)." [3] This paper looks at the outcomes of the MBNQA by presenting an analysis of the performance of the Award using two sets of primary data: (1) the Malcolm Baldrige National Quality Improvement Act legislation and related congressional testimony; and (2) the original documents that were provided by the winning companies, which include documents that the legislation requires each winning company to produce and make available to other United States organizations — and other documents that describe the measures taken by the company, which resulted in it winning the Award. The paper is premised on the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation (as informed by the congressional testimony) with the observable results of the implementation of the legislation.

The purpose of this paper, Paper 1, is to study the origins of the Malcolm Baldrige National Quality Award by examining the international factors that contributed to the decline in the national competitiveness of the United States

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[3] Paper 3 was presented at the annual meeting of the American Association of Behavioral and Social Sciences, to be held in Las Vegas, on January 13, 1998.

between 1945 and 1982. The period of the study begins in 1945, when the United States was economically dominant, and when Germany and Japan were economically devastated (as a result of WWII) and non-competitors in the world economy.

The period of the study ends in 1982, the year the United States registered its first trade deficit since WWII. The paper looks at historical, social, cultural, and political factors in Germany and Japan that resulted in government, legal, regulatory, financial, educational, training policies and practices, and in business and managerial practices that influenced the rise in national competitiveness in Germany and Japan, and the decline in United States national competitiveness.

The method used in Sections 1 and 2 of the study is historical; the method used in Sections 3 is interdisciplinary comparative analysis. The independent variables of the study are the developments in Germany and Japan, between 1945 and 1982, that contributed to the rise in the national competitiveness of those two nations. The dependent variable is the decline in national competitiveness of the United States between 1945 and 1982.

Germany and Japan were chosen as the independent variables of the study, because after the United States, Japan, and Germany are the largest and most influential developed economies in the world, and each of these three countries is

the regional dominant of its economic and political region. Including these two countries as independent variables of the study also adds to the research integrity of the paper, because it satisfies the requirements of the comparative method of analysis used by cultural anthropologists: the study compares to the United States the societies of Japan and Germany, each of which has a distinct historical, legal, political, social, and cultural heritage. By using both Japan and Germany, the possibility of error that can result from subjectivity, and from the inaccurate conclusions that frequently result from binary comparisons is reduced.

The study uses the components of national competitiveness identified by Porter (1990), the General Accounting Office (1993), and other prominent authors (Thurow, 1992 and Dertouzos, et al.1989). Porter (1990) argues that a nation's competitiveness is determined by the competitiveness of its industries. He defines the determinants as (1) firm structure, strategy and rivalry, (2) factor conditions, (3) demand conditions; and (4) related and supporting industries. According to Porter (1990), Government policies do influence national competitiveness, but this influence is minor compared to the importance of industry competitiveness. Components of national competitiveness were also defined in Competitiveness Issues (1993) a report prepared by the General Accounting Office (GAO). The components of national competitiveness identified in the GAO report included: government policies, corporate structure, and financial and operating practices.

This paper also examines historical, social, cultural, and political factors, and managerial practices (during that same period) to ascertain if, and to what extent, historical, social, cultural, and political factors, and managerial practices are also contributing factors in the development of national economic competitiveness, and to a nation's continuing ability to compete successfully in a global economy.

This paper is presented in three sections: Section 1 discusses the developments that contributed to the rise in Germany's national competitiveness between 1945 and 1982. Section 2 discusses the developments that contributed to the rise in Japan's national competitiveness between 1945 and 1982. Section 3 examines the data developed in Sections 1 and 2, and correlates this data with the decline in the national competitiveness of the United States between 1945 and 1982. The paper then presents conclusions.

Literature Review

The review of the literature for this paper included: a search of book and journal collections at the Jackson, Green, and Meyer Libraries at Stanford University; a search of collections in the Santa Clara County Library System; a search of book and journal collections at the Orradre Library at Santa Clara University; a search of article abstracts from professional journals available through the

comprehensive online databases of Infotrac and ABI Inform; a search of government documents at federal depository libraries and through the World Wide Web search engine specifically for Government publications; a search of Dissertation Abstracts from a current CD ROM; a search of the Books in Print database; and searches on the World Wide Web using a variety of search engines.

The literature review focused on two areas: (1) Practitioner and scholarly references that relate to the historical evolution of quality management practices; and (2) References that relate principally to the analysis of national competitiveness. While no work coincided exactly with the scope or purpose of this paper the following review discusses the most important relevant works.

(1) Practitioner and scholarly references that related to the historical evolution of quality management practices.

Practitioner Literature

The practitioner literature includes numerous references that itemize the historical evolution of quality management practices, most of which include a reference to the MBNQA as the final U.S. development in the evolution of quality management practices. Most of these works reference Japan's Deming prize as

an international quality management antecedent to the MBNQA. None of these references are interdisciplinary nor do they make significant reference to social and cultural variables, and none addresses international historical factors that contributed to the decline in United States national competitiveness — beyond the impact of Japanese quality management practices.

Scholarly Literature

The scholarly literature includes two references that cover the history of quality management practices:

(a) Garvin (1988) presents a scholarly historical account of the history of quality management practices. This book is not interdisciplinary, and any reference to social and cultural variables is incidental. This work does not address the international historical antecedents of the MBNQA.

(b) Juran (1996) provides individual detailed historical accounts of quality management practices in several countries, dating back thousands of years. The chapter about the United States presents a chronological account of quality management practices. This study is not interdisciplinary, there is limited reference to social and cultural variables, and it does not address the international historical antecedents of the MBNQA.

(2) References that relate principally to the analysis of national competitiveness.

The search did not find any post WWII interdisciplinary analysis of the influence of historical, social, cultural, and political factors on the national competitiveness of Japan, Germany, and the United States. There are four scholarly references that focus on the analysis of national competitiveness. These are:

(a) Porter (1990) focuses his analysis on the competitiveness of individual industries within a nation. Porter's view is that whether a nation is internationally competitive, or not internationally competitive, is due to what industries it has, and that government policies and corporate management practices (including quality management practices) have little, if any, influence on a country's competitiveness. This reference is not interdisciplinary, and contains only passing reference to historical, social, cultural, and political factors.

(b) Competitiveness Issues (1993) objectively addresses several competitiveness issues, including: government policies, corporate structures, and financial and operating practices. This reference is not an interdisciplinary analysis. The report also makes no significant reference to managerial practices, including quality management practices.

(c) Dertouzos, Lester, Solow & The MIT Commission (1989) report on industrial productivity, presenting a diagnosis of current productivity (competitiveness) problems in the United States, using seven industries to illustrate and analyze patterns in productivity.

(d) Thurow (1992) discusses the strengths and weaknesses in the economies of Japan, Europe (although not Germany *per se*) and America [sic] and details the factors that, in his opinion, will determine the success of these three economies in the future. Thurow's analysis addresses the relative competitiveness of Japan, Europe, and the United States, by examining the impact of various political, historical, and economic factors on the rise and fall of these economies.

The last two references, Detouzos et al. (1989) and Thurow (1992), are books prepared by scholars that analyze the decline in United States competitiveness. Both books contain numerous references to specific managerial practices, used in Japan and Germany, that the authors argue have contributed to the ability of these countries to compete, and which have contributed to the decline in the United States national competitiveness. The analysis in these books is not specific to Japan, Germany and the United States, and the books do not provide an interdisciplinary historical analysis of the influence of historical, social, cultural, and political factors on the decline in United States national competitiveness.

Section 1: Developments in Germany between 1945 and 1982

The Pre-Marshall Plan Period: 1945 - 1948

In May 1945, "Europe was a shambles. Its peoples were destitute, with little shelter, and with scarcely enough food to keep body and soul together . . . Central Europe was spent, worn out, and for the most part without hope to rebuild" (Mayer, 1969, p. 7). The physical devastation of Germany was great, but so was the psychological devastation. The Germans, having prosecuted two world wars in the course of less than 30 years, had been defeated in both. They were seen by most of the world as the nation that exterminated millions of innocent people, and they bore the humiliation of having taught their children that Hitler was superior to Christ and the German's Son of God (Capra, 1942). "The years from 1933-1945 are associated with the darkest and most terrible chapters of German history . . . political and moral devastation knew no bounds" (Info-bank, 1997, Unification Exhibit). A nation in disgrace with the world, Germans were motivated by a need for atonement psychologically and physically, and also motivated to restore their battered economy.

The policy of the non-European allied powers and the international organizations, including the United Nations Relief and Rehabilitation Administration (UNRRA), IMF, EBRD, ITO, EX-IM Bank, and the GATT towards

the European allied powers, was to provide them with relief. The allied powers' policy towards Germany, on the other hand, was not to provide relief, but to punish and reform (Price, 1955).

Germany, as the perpetrator of the devastation, was divided and occupied following the war: Russia, France, Great Britain and the United States, each controlled one of four zones. The policy was that what little remained of Germany's military establishment would be destroyed or put to a non-military use, and what remained of it economically was to be parceled out as war reparations (Price, 1955; Zink, 1957).

From the period of April 1945 to July 1947, the United States policy towards Germany was defined in Directive JCS 1067. Directive JCS 1067 prohibited fraternization between United States personnel and the German people, forbade economic reconstruction, provided for a dramatic de-industrialization program, emphasized agricultural reconstruction; included a strict program of denazification (which covered both public and business life); and prohibited United States aid in the rebuilding of Germany (Zink, 1957). "Under this directive, the German people were definitely considered a menace to humanity and guilty of crimes against other people; as such they were to be dealt with very firmly though properly" (Zink, 1957, p.94).

Although each of the four occupying powers managed its zone of occupation, the policy initiatives for reforming western Germany were jointly decided and administered by the occupational forces of the United States, Great Britain, and France, each of which was directed by a High Commissioner. Germany was not represented in these decisions. This absence of representation from any German governing body is credited with the swiftness and objectivity with which the Occupation's administration made decisions and issued directives. These decisions were made, and the directives were issued, free from domestic politics and free from affiliations with the German industrial structure (Price, 1955).

Although Directive JCS 1067 was in force through July 1947, there was a gap between its provisions and their implementation, at least by the United States occupying forces. From the outset, United States service men were sympathetic to the plight of the German people. "The American service men were soon spotted as an easy touch by children and adults alike and they shared their food allowances with the less fortunate" (Mayer, 1969, p. 8). It was very common for American service men to request supplies from home on behalf of German citizens. Between 1945 and 1947, 90 million packages had been sent to people in Germany via United States military transport (Mayer, 1969).

Beginning in the second half of 1946, there was a softening in the general attitude from United States policy makers. This was partially because the

American people did not feel strong animosity, anger, or contempt for the German people; and partially because the American people were becoming less fearful about Germany (which was dependent on the United States for economic survival) — and increasingly distrustful and skeptical of the aims of the Soviet Union. As a result of this softening in the attitude of United States policy makers, the United States occupying forces (under the leadership of General Lucius Clay) exercised a great deal of pro-German discretion in their implementation of Directive JCS 1067 (Zink, 1957; Mee, 1984).

In July of 1947 a new United States policy directive, JCS 1779 was implemented. Directive JCS 1779 was more liberal with respect to provisions for economic development, education, cultural and information programs than directive JCS 1067. The continuing shift in United States policy toward Germany was clearly evidenced by November 1947, when Secretary of State George C. Marshall delivered an address in Chicago where he stated that the restoration and revival of Germany's economy was required for the revival of the European economy (Zink, 1957; Mayer, 1969; Price, 1955).

The Marshall Plan Period: 1948 - 1952

Directive JCS 1779 remained in effect until 1948, when the United States policy toward Germany underwent a major change. The cause for this change was not related to economic restoration (of either Europe or Germany), but was precipitated by a political and military action by the Soviet Union: the blockade of Berlin (Zink, 1957).

The Berlin Blockade resulted in a dramatic change in the objectives for United States policy toward Germany. United States policy actions reflected a belief that the Soviet Union (and communism) had now superseded Germany (and fascism) as the villain on the world stage (Mayer, 1969). Zink (1957), Mayer (1969), and Mee (1984) have found four responses, triggered by the Berlin Blockade, that demonstrate that the Berlin Blockade was a key turning point in the relationship between the United States and Germany. These four responses were: (1) The magnitude of the response to the Berlin Blockade, and the speed and decisiveness with which the United States (and the United Kingdom) countered the aggression of the Soviet Union, was perceived by the Germans as an incredulous act of courage and support (given the recentness of Germany's own terrible acts of aggression); (2) Germany became a key partner in the alliance to oppose Soviet aggression; (3) For the first time since WWII, Germany

received moral support from the allied powers, directed toward achieving rapid economic reconstruction; and (4) The United States changed its policy on aid toward Germany, so that Germany was eligible to receive aid under the Marshall Plan.

The year 1948 was also a turning point for economic reconstruction for western Europe and western Germany, when the United States Congress approved $17 billion in support for the Marshall Plan. The Marshall Plan was developed by the United States as a mechanism to jump-start the reconstruction of those economies that had been devastated during WWII and that indicated a serious commitment to the establishment of democratic forms of government. The countries of western Europe were the principal recipients of this aid (Mayer, 1969; Price, 1955; Zink, 1957).

A central element of the Marshall Plan in western Europe was the stipulation that the Europeans were responsible for developing the program for Europe's recovery. The Committee for European Economic Cooperation (CEEC) was created to give effect to this provision of the Plan. The CEEC was responsible for developing the guiding principles of the European Recovery Program (ERP). These principles identified, *inter alia*, the need for integrating the economy of western Germany with the economies of western Europe (Price, 1955).

All participating ERP countries pledged "to cooperate with one another and with like minded countries in all possible steps to reduce the tariffs and other barriers to the expansion of trade both between themselves and with the rest of the world" (Zink, 1957, p. 55). Although the United States strongly encouraged the full participation of western Germany in the ERP, and although the nations of western Europe agreed that Germany's revival was a pivotal requirement of European recovery, most Germans were amazed that the nations on which it had prosecuted a long and terrible war (much of the destruction of which was still clearly visible) were offering Germany full membership in the collaborative rebuilding process (Zink, 1957).

The change in United States policies and plans, which included Germany as a recipient of Marshall Plan aid and other sources of reconstruction aid, and the Marshall Plan's objective of economically reintegrating Germany into western Europe, resulted in a dramatic acceleration in Germany's economic recovery and development.

Factors that contributed to Germany's economic recovery and development

Price (1955), Zink (1957), Mayer (1969), Mee (1984), Fullbrook (1990), Garten (1992), Thurow (1992), and The Last 1000 Years (1997) found eight factors

that were principal contributors to Germany's swift economic recovery which provided the foundation for rapidly increasing their national competitiveness. These eight principal factors are: (1) existing industrial capacity; (2) existing export and foreign trade experience; (3) The synergistic effect of a collaborative community of participants; (4) the focus on investment in key industries; (5) the absence of military spending; (6) the 1948 monetary reform; (7) the leadership of Konrad Adenauer; and (8) the German people were motivated to begin a new chapter in their history.

(1) Industrial capacity.

The initial damage assessment of the German economy had been overstated by the allied forces. The destruction was plainly visible, and financial markets and trading relationships were in ruins, however, much of Germany's industrial capacity and technical knowledge and skills were intact, and there were even some industries (such as machine tools) that had flourished during the war (Mee, 1984). Initial estimates of industrial destruction were put at 80%, whereas the actual figure was closer to 20% (Zink, 1957).

(2) Existing export and foreign trade experience.

With the loss of its empire, and its industrial base badly damaged or

inoperative, Germany had to rely on trade to obtain essential goods and services to fuel its economic recovery and growth. Because Germany had historically relied on exports to maintain and develop a strong economy, and because its exporting expertise and the infrastructure needed to reestablish export activity were still available, Germany was able to recover its position as a major exporting nation within a very short period of time (Zink, 1957). Even under the restrictions imposed by the Occupation, between 1949 and 1950, Germany's foreign trade doubled, and in 1951 it rose another 75%. Without restrictions between 1954 and 1964 it rose another 300% (Mee, 1984).

Germany was the most vocal advocate of trade liberalization within western Europe. This active pursuit of trade within western Europe combined with taking advantage of the United States open trade policy, which encouraged foreign nations to view the United States as the most open market for their exports, provided Germany with markets greatly facilitating the momentum for rebuilding Germany's economy (Thurow, 1992).

(3) The synergistic effect of a collaborative community of participants.

Responsibility for Germany's economic recovery and development was assumed by a synergistic set of participants. These participants included banks, industry cartels, large corporations, labor, and the Laender

governments (German states), and to a lesser degree, the Federal Government. The principal government role assumed by the Laender governments, rather than the Federal government, was intentional. Following the war the Germans (and Germany's neighbors) were very distrusting of strong central powers. This resulted in a devolution of power, at the behest of the allied powers, to the German Laender (Mayer, 1969; Fullbrook, 1990; The Last 1000 Years, 1997).

(4) The focus of investment in key industries.

Germany prepared an industrial development plan, or what would now be called an industrial policy, which concentrated investing Marshall Plan and other financial aid in six industries that would provide the foundation for economic growth. These industries were: energy (electricity and coal), agriculture and food, transportation, communication, steel, and housing (Price, 1955).

(5) The absence of military spending.

Because Germany was prohibited from rebuilding its military, German policy makers did not have to choose between investing in the development of the economy and investing in military capability. Although this prohibition was

removed in 1955, when German Basic Law was modified to allow for a German military, even after 1955 military spending did not compete significantly with the development of the economy as the primary focus of economic allocation (Garten, 1992;Statistical Abstract, 1995).

(6) The 1948 monetary reform.

In 1948, a major monetary reform was introduced which replaced the Reichsmark with the Deutsche Mark. The reform was developed and implemented under the direction of the Minister for Economics, Ludwig Erhart, and was considered by many to be a model reform. Because the monetary reform made possible the re-acceptance of Germany as a trading partner it is credited as being an action that triggered a revival of German's economy and its national competitiveness (Zink, 1957).

(7) The leadership of Konrad Adenauer.

Under the leadership of Konrad Adenauer, the German's demonstrated to the world that they were genuinely remorseful and repentant, and that they wanted to coexist peacefully with other democratic nations. Adenauer's task in this regard was made more difficult because Germany had, in recent history, twice violated its professed desire for peaceful coexistence. In 1871,

the year of Germany's nationhood, Chancellor Otto von Bismarck convinced the community of nations that Germany should be given equal standing with other nations, only to have Kaiser Wilhelm II launch on those nations the First World War. And Adolph Hitler used the pretense of alliance to facilitate success in his use of the *blitzkrieg* (sudden overwhelming attack) (The Last 1000 Years, 1997).

(8) The German people were motivated to begin a new chapter in their history.

The Germans had been the perpetrators of two world wars, and lost them both. With the second of these losses, in 1945, they were an occupied nation, the owners of the guilt of the now well known genocide, and at the mercy of the world. But they were repentant and motivated to begin a new chapter in their history. The Germans had the difficulty, however, of being motivated by conflicting goals. They wanted to move quickly to restore their economy, however they had to temper their efforts to not appear too aggressive. This was because restoring the economy required achieving the prerequisite goal of peaceful coexistence, which meant that they had to demonstrate atonement and conciliatory attitudes and behaviors to the community of nations, and especially to the European community (Mayer, 1969; The Last 1000 years, 1997).

Although the United States Occupation of Germany continued until 1955, when the Marshall Plan concluded in 1952, United States policy objectives for rebuilding Germany's economy were well established and on course. Germany was progressing with reintegration into western Europe, its trading position within Europe was strong, and its deficit with the United States dollar was rapidly declining (Price, 1955). Germany had economically and politically positioned itself for the experience of, what is referred to as the German Economic Miracle *(Wirtschaftswunder)*, a period where Germany experienced a rapid rise in its national competitiveness (Garten, 1992; The Last 1000 Years, 1997).

The Post Marshall Plan Period: 1952 - 1982

The German economic miracle, which occurred during the 1950s and 1960s, and the continuing rise of German national competitiveness to a position of the world's third largest developed economy, were due to a large degree to historical, social, cultural, and political factors (Lodge & Vogel, 1987; Fulbrook, 1990; Garten, 1992; Glouchevitch, 1992; Competitiveness Issues, 1993; The Last 1000 Years, 1997). These factors influenced, either directly or indirectly

elements of: (1) government policies and practices; (2) financial practices; (3) business and managerial practices (including corporate structure and governance, labor and management practices, education and training practices; organizational behavior and quality management practices); and Germany's national competitiveness.

The following section discusses the influence of historical, social, cultural and political factors on these three areas of practice and on Germany's national competitiveness.

Government Policies and Practices

Four factors within the area of Government Policies and Practices were found by Lodge & Vogel (1987); Garten (1992); Smith, Patterson, Merkl & Padgett (1992); Competitiveness Issues (1993); and The Last 1000 Years (1997) as having a significant impact on the national competitiveness of Germany. This subsection provides a discussion of these four factors: (1) An historical overview of the development of a democratic form of government in Germany; (2) Government practices specific to fueling economic growth; (3) The relationship between government and industry; and (4) Antitrust.

The development of a sustainable democratic form of government

The Last 1000 Years (1997) chronicles the three attempts in Germany's history to establish a democratic form of government. The first attempt occurred in 1848, with the meeting of the first pan-German parliament (Reichstag). The Reichstag was successful in electing a Chancellor: Otto von Bismarck, and adopting a document similar in purpose to the United States Bill of Rights, called the Basic Rights of the People. Kaiser Wilhelm II, however, was opposed to the parliamentary democratic form of government, and so democracy was not furthered at this time. Instead a constitutional monarchy was established in which Kaiser Wilhelm II and Otto Von Bismarck governed independently of the Reichstag. Because of this, the Basic Rights of the People remained unimplemented.

The most serious violation to the integrity of what remained as the basic rights of German citizens occurred in 1878, when in response to labor union activity, which the Kaiser and the Chancellor considered to be militant, Bismarck enacted the "Anti-Socialist Laws." These laws suppressed the activities of labor unions, which had been directed toward obtaining better working conditions.

Bismarck countered worker opposition to the Anti-Socialist Laws, by reducing the dependance of the worker on the labor unions. He did this by instituting some of the earliest communitarian practices in Germany, which were various forms of social welfare payments. The Anti-Socialist Laws remained in effect until 1912, when they were repealed. The system of social welfare, however, survived. The second attempt at a democratic form of government occurred in 1919 when the Weimar Constitution was adopted and Germany's first parliamentary democracy was founded. The Weimar Constitution was ill conceived, and was characterized by political mayhem. This first attempt at a parliamentary democracy collapsed in 1933, with the rise of Hitler and Nazi Germany. Under the Dictatorship of Hitler the rights of labor, political parties, and other interest groups were recanted (Gay, 1968).

The third attempt at a democratic form of government was in 1949, with the adoption of the *Grundgesetz* (German Basic Law), which established the Federal Republic of Germany (FRG) as a parliamentary democracy. In 1949 the FRG consisted of the three areas of Germany (called Bizonia) that were then occupied by the United States, France, and Great Britain. The development of German Basic Law was heavily influenced by historical factors as well as the current needs at the time. German Basic Law defines the rights and roles of government, labor, political parties, commerce and other interest groups, reflecting the needs of these German constituencies for protection against the return of authoritarian leadership. It limits federal

powers (yielding significant powers to the Laender), emphasizes the role of the government as an instrument for the citizens of Germany, and contains numerous stipulations requiring cooperation between the government, industry, and labor (Smith et al. 1992). The durability of German Basic Law to serve the needs of the German citizens and state, since 1949, has provided the stabile foundation necessary for economic growth that had not previously existed in the history of the German nation (Info-bank, 1997).

Government practices fueling economic growth

Consistent with the various needs of The Federal Republic of Germany in 1949, its economy was constructed to be a "social market economy in which market competition and social protection are not viewed as antagonistic, but as reinforcing" (Competitiveness Issues, 1993, p. 31). The success of Germany's social market economy was, and continues to be, dependent upon the integrated support of Germany's community of players (government, industry, and labor).

Following WWII, economic re-development in Germany was encouraged by the government through a *defacto* industrial policy. This included tax concessions, subsidies, and other tax policy that favored investment in targeted industries. Consistent with Germany's social market economy, targeted industries were identified by the leaders of the nation's community of

players, as industries that either reflected national core competencies and needed strengthening, or were necessary to building the foundation necessary for supporting economic recovery (Price, 1955; Mayer, 1969).

Also, consistent with Germany's social market economy, provisions were made in the German Basic Law for significant state ownership of industry and industry infrastructure, including telecommunications, postal services, airlines, and rail transportation. State ownership was instrumental in the re-building of these industrial segments following WWII, and to building Germany's national competitiveness (Mayer, 1969; Garten, 1992). Subsequent to re-building, the pace of developments in some state owned industries has not kept pace with ongoing developments in other countries where these industry segments are privately held (Competitiveness Issues, 1969).

Relationship between government and industry

Lodge & Vogel (1987) describe the relationship between government and industry as generally cooperative rather than adversarial. This is facilitated by German Basic Law provisions, by German communitarian ideology and practice, and by associations that ensure that the interests of industry are represented. There are two categories of associations that fulfill this role: chambers of commerce and industry; and business associations.

Participation in a chamber of commerce and industry, or a chamber of artisans, is required by law. The Chambers are responsible for, *inter alia*, representing the views of its members on proposed federal legislation; and presenting, on behalf of German industry, responses to European Union initiatives (Randlesome, 1994).

Membership in business associations is voluntary, however, most commercial establishments are members. There are 34 nationally organized business associations (*Zentralverbande*) organized into 500 trade and state associations (Randlesome, 1994). The primary responsibilities of the business associations are to represent the interests of its members in the development and promulgation of industrial policy (both in Germany and within the European Union), and to influence policy on education, R&D, the environment, taxation and exporting (Garten, 1992; Randlesome, 1994).

Antitrust

Prior to WWII, Germany had six thousand major cartels (Garten, 1992). One of the objectives of the Marshall Plan administrators was to reduce the existence and development of cartels and other forms of monopoly. After a long and fierce seven year struggle, the Cartelization Law was passed in 1957. Its development was influenced by United States antitrust laws, but it

has many distinctive provisions (Competitiveness Issues, 1993). The German Cartelization Law's main criterion is to protect against market domination. But even this protection is weak, in comparison to United States antitrust provisions. German antitrust law permits nine types of legal cartels, one of which is a broad exception for a cartel if it "increases the efficiency and productivity of a firm and hence lowers consumer costs" (Charkham, 1994, p. 32).

There is evidence to support the argument that the dismantling of the cartels in Germany after WWII contributed to rebuilding Germany's national competitiveness. There has been a growing concern, however, that the continued growth of large firms in the Post WWII years is adversely affecting German national competitiveness (Charkham, 1994).

Financial Practices

There are two financial practices that have been found by Garten (1992); Competitiveness Issues (1993); Charkham (1994); Glouchevitch (1994); Randlesome (1994); and Smith et al. (1994) to have played a significant role in Germany's national competitiveness. The first practice is monetary policy, which is set by the Bundesbank. The second practice is the sources of industry and commercial finance.

Monetary Policy and The Bundesbank

Since becoming independent from the Federal Government in 1957 the reputation of Germany's central bank, the Bundesbank, has become renowned for its ability to control inflation. Its focus on controlling inflation was motivated by historical factors. Twice in a period of 25 years the Germans have experienced the devastating effects of hyper-inflation: the first time was in 1923, the second time followed WWII (Fulbrook, 1990, The Last 1000 Years, 1997). The second occurrence ended with the currency reform act of 1948 where the Reichsmark was replaced with the Deutsche Mark. The pain of these hyper-inflationary periods was sufficient motivation for the Germans to conclude that protecting Germany's currency must be taken out of the political arena and, in 1957, the Bundesbank Act was passed which gave the central bank independence from the Federal Government[4] (Smith et al. 1994).

The Bundesbank's reputation for controlling inflation is not without its detractors both abroad and at home. At home the Bundesbank's strict control has contributed, at times, to reducing the competitiveness of German goods in foreign markets; and within Europe it has contributed to instability in the European exchange rate mechanism (Garten, 1992; Thurow, 1992).

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[4] The Federal Government can override Bundesbank policy if it is believed to be in the nation's interest (Smith et al. 1994).

Sources of Financing

From the late 1800s until 1945, there had been three major "universal banks" for industry in Germany: Deutsche Bank, Dresdner Bank, and Commerzbank (The Big Three). Following WWII the allies forced the break up of The Big Three, but in the 1950s they were re-formed, and reestablished their ties with industry. Conceptually and legally, German banks are very different from United States banks. "Universal banks are free to provide a wide range of services, from commercial to investment banking, and also to invest in equities on its own account. Universal banks can hold whatever share of equity they like in a non-financial firm" (Prowse, 1994, p. 21). The freedom to invest in equities for their own accounts (which, in the United States, has been prohibited since the separation of commercial banks and investment banks by passage of the Securities and Exchange Act of 1934) is the greatest single difference between German banks and United States banks. In general, in Germany the relationship between banks and industry is not hampered by regulatory constraints. In fact, the use of banking services by industry has been facilitated by regulatory constraints in the German capital markets (Charkham, 1994; Randlesome, 1994).

The financial regulatory environment, which has been developed in collaboration with the principal German banks, has constrained the growth of

equity, commercial paper, and the bond markets, and has prevented the development of capital markets in Germany (Glouchevitch, 1994; Randlesome, 1994). Consequently German banks have become the traditional source of external industry financing. However, a combination of risk averse behavior and relatively minimal stockholder expectations, with respect to return on investment, has given Germany's larger corporations a preference for the use of internal fund sources. Charkham (1994) found that the largest source of investment capital is retained earnings, with 78% of internal investment being filled from this source, and that German pension funds are also a significant source of internal financing. The use of pension funds for financing is made possible because pension funds do not have to be placed in a separate trust, and they are available to be used as working capital.

It is a common practice in Germany for a company to form a long term relationship with a house-bank (*Hausbank-Prinzip*). In addition to being the primary or sole source of financial services, the house-bank provides assistance in a time of crisis (in all but exceptional circumstances) and is the central player in any rescue operations. German society places great emphasis on the preservation of their business institutions, and German banks play a key role in facilitating this preservation (Randlesome, 1994).

For small and medium sized companies low interest loans are made available through the Kreditanstalt Wiederfbau. Founded in the late 1940s with funds from the Marshall Plan, and still operating today, Kreditanstalt Wiederfbau (KfW) channels low interest loans to small and medium sized businesses. Funds from KfW along with concessions and subsidies from the Federal and Laender governments are used to promote growth in specific areas of industry or in specific geographical regions (Randlesome, 1994). The Germans have enjoyed success in the development of their small and medium sized companies. The *Mittelstand*, the German name for the population of middle sized companies, is considered to be the driving force in Germany's economic development (Fulbrook, 1990; Competitiveness Issues, 1994; Info-bank, 1997; The Last 1000 Years, 1997).

Business and Managerial Practices

The practices covered in this section have been found by Millar (1979); Peters (1980); Lodge & Vogel (1987); Porter (1990); Thurow (1992); Competitiveness Issues (1993); Charkham (1994); Prowse (1994); Randlesome (1994); Juran (1996); The History of Technology (1997); and The Last 1000 Years (1997) to reflect business and managerial practices that have significantly impacted German national competitiveness. Practices included are: Corporate Objectives,

Organizational Structure, and Governance; Labor and Management Practices; Organizational Behavior; Education and Training; and Quality Management Practices.

Corporate Objectives, Structure, and Governance

This section discusses four elements of corporate objectives, structure and governance practices that have been found by Charkham (1994), Glouchevitch (1994), Prowse (1994), and Randlesome (1994) to have impacted German national competitiveness. The four elements are (1) corporate objectives, (2) the dual board structure of German corporations, (3) the role of banks as a source of corporate control, and (4) the Mittelstand.

1) **Corporate objectives** are influenced by provisions in the German Basic Law which state that the ownership of property imposes public duties on the owners (Smith, et al. 1994). With the guidance of German Basic Law, consensus has emerged from the various constituencies, about the order of corporate objectives. "This orientation and consensus matter, for they underline so much of the German approach to corporate governance" (Charkham, 1994, p.10). According to Charkham (1994) and Prowse (1994) the first objective for most German firms is perpetuity of the company. The second objective is satisfying the goals (specified in order of priority) of public customers, employees, owners

and suppliers. The third objective is maximizing return on investment.

(2) The dual board structure. Consistent with communitarian practices, and in response to a history of labor suppression, German joint-stock corporations are now governed by two boards, which include membership from management, shareholders and labor. The two boards are: the managing board of directors (*Vorstand*), responsible for the daily management of the corporation; and the supervisory board of directors (*Aufsichtsrat*), responsible, *inter alia,* for appointing members to the management board (Glouchevitch, 1994; Prowse, 1994).

The supervisory board is composed of members that are shareholders and worker representatives. It is common for at least one board member from the shareholder side to be from a major German bank, and for one-third of the worker representatives to be from an external trade union. Although the supervisory board is generally recognized as the controlling body, German Basic Law "confers power on the *Vorstand* as an organ. It is the board — with a massive concentration of power. It is envisaged as a collective and is expected to operate collegially. The *Vorstand* is a real decision-making body and is not considered, as it is in the U.S. to be an adjunct to the CEO" (Charkham, 1994, p.19).

(3) The role of banks in corporate control. German banks exercise both influence and control over industry. Charkham (1994) and Prowse (1994) have found four sources of this control: (a) equity positions; (b) the system of deposited share voting rights (DSVR); (c) collaboration among banks; and (d) member participation on supervisory boards.

(a) Equity positions. German banks often hold large blocks of shares in their client corporations, which entitles the bank to a voice in the corporation's management. These share holdings are, in most cases, not acquired by the bank as an investment *per se*. Rather, they are the result of debt for equity swaps when, on one or more occasions the bank has agreed to save a company from failing by converting some or all of the company's debt to equity. There are also a number of cases where banks have been asked by the government, in the national interest, to acquire a significant shareholding in a company.

(b) DSVR. The proxy vote control, conveyed through the system of deposited share voting rights (DSVR), is the real source of significant corporate control through bank equity holdings. "A study of the ownership structure of the 100 largest firms showed that banks, with the proxy of small investors could possibly have dominated 34 of these firms in 1975" (Charkham, 1994, p. 38).

(c) Bank Collaboration. The power banks exercise, through the combination of equity ownership and DSVR, can be augmented by collaboration among banks, each of which is holding an equity position. A study conducted in 1988 found that 82.7% of all votes, at 32 of Germany's largest companies, were held collectively by banks. The Big Three accounted for 45% (Prowse, 1994).

(d) Membership on Supervisory Boards. Bank control over corporations is increased still further with member participation on supervisory boards. According to a 1978 German Monopolies Commission (*Monopolkommission*) Report, German bankers sit on more supervisory boards than they have significant equity interests. In 1988, the Big Three had seats on more than 70 of Germany's 100 largest companies; Deutsche Bank alone held 54 seats on boards of 44 of the 100 largest firms; and a banker was chairman of the supervisory board in 20 out of 44 of these corporations (*Monopolkommission,* 1978).

Bank participation on company supervisory boards is somewhat controversial, especially with those who are from nation states where a company's lenders are prevented from participating in management decisions (because of principles relating to fiduciary responsibility), and who view bank participation in the management of a company as a clear conflict of interest. However, through 1982, no action had been taken to prevent or limit this practice, for three

reasons: (1) German Banks have historically played a key role in the economic growth and development of the German nation during prosperous and not so prosperous times; (2) Banks have played a key role in the preservation (or what the German's call the perpetuity) of German companies; and (3) Bank participation on supervisory boards is seen as helpful to industry and the nation. With early access to information, banks can use their vast research and analysis departments to formulate and implement preventive actions in a timely manner, to help maintain (or restore) the health of the institution, and to preserve control of the institution in the event of an impending takeover (Competitiveness Issues, 1993; Charkham, 1994; Prowse, 1994; Randlesome, 1994).

(4) The Mittelstand. German industry today is dominated by a small number of large firms: 10% of all sales in Germany are from 10 corporations. The real strength of Germany's economy, however, lies with the thousands of medium size companies referred to as the *Mittelstand.* "Usually family owned, the *Mittelstand* employ two-thirds of the work force, take 86% of the apprentices, and produce nearly half of the GNP" (Charkham, 1994, p. 17). Following WWII many *Mittelstand* companies began to internationalize their market presence, and are now responsible for "a considerable part of western Germany's trade surplus" (Randlesome, 1994, p.185). The success of these companies is attributed to their targeting of niche markets with products that are of superior technology and quality (Garten, 1992; Glouchevitch, 1994).

Labor and Management Practices

Germany's history of suppressing labor drove the development of legal provisions, following WWII, that would specifically define worker's rights (The Last 1000 Years, 1997). Randlesome (1994) attributes the high levels of productivity from German workers following WWII, to the high level of industrial democracy which is grounded in three legal provisions: the Co-Determination Act; The Works Constitution Act; and German Basic Law's recognition of Employer Associations.

Co-Determination. The practice of sharing supervisory board seats between labor (employee trade union representatives) and shareholders, is called co-determination. It was first introduced in 1951 for the coal mining, steel, and iron industries, and provided for the equal sharing of supervisory board member seats between shareholders and labor. In 1952, co-determination was extended to all companies with over 500 employees, but the proportion of supervisory board seats allocated to labor representatives of these companies was set at one third. In 1976, the Co-Determination Act (*Mitbesttimmungsgesetz*) was passed, which requires corporations (AGs and GmbHs) with more than 2000 employees to have supervisory boards composed of half labor representatives and half shareholder representatives, and companies with between 500 and 2000 employees to have one third of supervisory seats allocated to labor

representatives (Charkham, 1994; Randlesome, 1994).

Co-Determination practices, which require joint decision making processes, have been instrumental in forging a cooperative, collaborative relationship between labor and management. Co-Determination has, however, also been a catalyst for conflict between labor and management. The conflicts are rooted in a struggle for power, where labor's repeated calls to the government to amend the Act to provide for more equitable power sharing and management's response to labor's demands in this regard is that labor already has too much power and is impeding the ability of German companies to be competitive (Lodge & Vogel, 1987; Glouchevitch, 1994).

Works Constitution Act. According to Randlesome (1994), The Co-Determination Act does not apply to companies with less than 500 employees, however, companies with more than 100 employees are required by The Works Constitution Act of January 15, 1972, to facilitate a cooperative relationship between labor and management, through two requirements. Companies are required to give workers access to information on current and impending company operations, directions and strategies; and companies are required to provide for Works' Councils (*Betreibsrat*), which are forums mandated to protect employee rights in the workplace. The Works Constitution Act also specifies that Works' Councils must work to maintain peace in the workplace. A study by the

London Graduate School of Business noted that "A striking aspect of the Works' Councils functioning was their dual interests; firstly, as representative of the workforce who elected them but, secondly, their concern with the welfare of the company as a whole" (Millar, 1979, p.61).

Employer Associations. The emergence of trade unions in Germany in 1913, and their re-emergence following WWII, has been mirrored by the establishment of Employer Associations. Employer Associations are given formal recognition in German Basic Law. Although participation is voluntary, it is estimated that 80% of eligible businesses are members (Randlesome, 1994). The more than 1200 Employer Associations have responsibility for representing their members on both social policy issues and matters of industrial relations, which include negotiations between labor and management. The greatest impact of Employer Associations related to Germany's rise in national competitiveness is, however, felt in the informal forum they provide for members to network, to meet and share matters of mutual interest, and to develop strategies that are designed improve the ability of member companies to compete with foreign companies and industries (Lodge & Vogel, 1987; Randlesome, 1994).

Ongoing discussions among Works' Councils, Employer Associations, and supervisory board labor representatives has resulted in labor supporting a high percentage of management decisions and directions (Millar, 1979; Randlesome,

1994). This in turn contributes to maintaining a collaborative, cooperative relationship between management and labor.

Organizational Behavior

Millar (1979), Porter (1990), Garten (1992), Thurow (1992), and Competitiveness Issue (1993) have found four distinct German organizational behavior practices that have affected national competitiveness: (1) a focus on *Technik* (technical superiority); (2) workplace equality; (3) supplier, buyer and competitor relationships; and (4) the use of mergers and acquisitions.

Technik. According to Millar (1979) German's generally do not believe in management as a universally applicable set of principles and practices that transcend particular products and services, but believe that a complete and through knowledge of the product or service and how it is made is a *sine qua non* of managing its development, manufacture, and marketing . Consistent with these beliefs, and the fact that the focus for most German firms is on the development and manufacture of technically superior products, the emphasis is on the development of knowledge and skills in technical and engineering areas (particularly in areas of manufacturing) rather than the development of management knowledge and skills *per se* (The History of Technology, 1997). German firms are, therefore, almost exclusively managed by executives who

have scientific or technical backgrounds, and who place a premium on their engineering and technical knowledge and experience (Thurow, 1992).

Germany's strong technical focus is supported by the institutions that participate in research and development (R&D) activities, which include universities, the Federal and Laender governments, and industry. R&D initiatives have been very successful in improving and upgrading technology in fields where Germans have been historically strong, such as chemicals and machinery. R&D initiatives have been less successful, however, with breakthrough technologies in electronics and new materials, and German industry has steadily lost worldwide market share in these industries (Porter, 1990).

The almost exclusive focus on *technik* has perpetuated a production oriented mindset (reminiscent of the United States before 1960), rather than a market oriented mind-set, helps to explain the relative absence of expertise or emphasis on sophisticated marketing practices. Marketing is seen by most German executives as a United States invention, as superficial, and not consistent with or applicable to the German model of business (Millar, 1979; Lawrence, 1980). As a consequence, Germany's success in industries that rely on marketing skills and expertise, such as consumer goods, has been limited (Porter, 1990).

Workplace Equality. Germans believe in workplace equality. This is consistent with Lawrence (1980) comment that in general "Germans do not counterpose thought with action, intellectual ability with technical prowess, engineering knowledge and commercial aptitude, inventiveness and profits, professions and non-professions, detailed knowledge and the overall view, line and staff, production and maintenance, or work and style" (p. 181). Because they are not prone to compartmentalize or stereotype human resources, they have demonstrated a high level of success in recruiting and retaining qualified individuals from all sources in the German education and training system. It also enables groups with diverse training and education qualifications to function effectively (Lawrence, 1980).

Supporting workplace equality is a managerial practice that does not recognize or reward individual efforts. Although this has the advantage of fostering the strength of the group, it is believed to be responsible for an aversion for risk taking by German employees. This has also contributed to a lack of entrepreneurial activity and innovative development by German employees, compared to employees in other developed economies (Porter, 1990).

Relationship of Suppliers to Buyers and Competitors. German buyers and suppliers from similar industries are normally clustered in close geographic proximity to each other. Suppliers and buyers have collaborative relationships

that are helpful to the process of delivering new products and processes to demanding German technical specifications. Because there is the perception that their principal competitors are outside of Germany, competitive suppliers and buyers also have collaborative relationships. This collaboration by German competitors makes it more difficult for non-German companies to compete successfully with German companies, both in Germany and in foreign markets (Porter, 1990; Randlesome, 1994).

Mergers and Acquisitions. Consistent with their primary corporate objective of perpetuating the corporation, German business institutions are averse to the use of mergers and acquisitions (M&As) as a means of achieving corporate growth. What M&As do occur are usually domestic, and are argued to be in the national interest. Attempts by foreign companies to acquire German firms are strenuously opposed (Adams & Brock, 1989; Glouchester, 1994; Randlesome, 1994). M&A activity in Germany is less than 1% of that found in the United States (Prowse, 1994).

Education and Training

Dating back to the introduction of compulsory education in Prussia by Frederick the Great in the 18th century, respect for education has a long history in Germany (The Last 1000 Years, 1997). According to Porter (1990) and Garten (1992) the

training and education of Germany's workforce has historically been, and is still, considered one of the nations greatest competitive advantage. At the center of this competitive advantage is Germany's vocational training system: the *Fachschule (*Randlesome, 1994).

Responsibility for matching private and public sector needs to vocational training programs is jointly held by the Laender governments and industry, with participation from labor. Training programs generally last three years, consisting of a combination of on-the-job training though an apprenticeship program, and theoretical instruction at a vocational school. Businesses are required to contribute 2% of their total payroll to funding the apprenticeship program (Randlesome, 1994). The combination of theoretical and practical training provides a background with immediately employable skills and an education base that can be built upon for future skill development. Once an apprentice is fully employed, ongoing training is the responsibility of the employer. It is estimated that 25% of the work force in any given year will have participated in some kind of continuing education program. Data collected in the mid-1980s indicates that German companies invest twice as much in worker training as United States companies (Competitiveness Issues, 1993).

German institutions of higher education are universities and polytechnics. Universities have existed in Germany since the 18th century, but polytechnics

(which now number more than 120) only emerged in the early 1960s. Randlesome (1994) states that polytechnics were created because the Laender felt they needed to develop an higher education alternative that would improve the work force by focusing on practical training, and that would be specifically designed to meet the human resource development needs of local industry and the public sector. Consistent with these criteria, the majority of degrees issued from polytechnics are engineering degrees. The remainder are mostly in economics, architecture, and public administration.

Motivated by competition for students from the polytechnics, in the early 1960s German universities began orienting their academic programs toward the needs of industry and the public sector. Employers from industry, however, have generally found that university graduates are "good abstract thinkers, but require a two year apprenticeship in business before they become really useful" (Randlesome, 1994, p. 153). For positions in upper management, employers prefer the employee to hold a university degree (and in particular a doctoral degree). In Germany 53.8% of management board members from the 100 largest German companies hold a doctorate (Charkham, 1994; Randlesome, 1994).

According to Randlesome (1994) absent in Germany's higher education system is the existence of institutions granting the Masters of Business Administration,

(MBA) degree. Randelsome argues that this absence is due to: (1) The long tradition Germany has for erudition in business economics dating to the 19th century; and (2) that Germany has an aversion to concepts not invented in Germany. Also contributing to the absence of the MBA, discussed earlier and noted by Thurow (1992) is that German firms are almost exclusively managed by executives who have scientific or technical backgrounds, and who place a premium on their engineering and technical knowledge and experience.

Quality Management Practices

Germany did not jump on the total quality management band wagon that swept the rest of the industrialized world in the 1980s. This is perhaps because German firms have a tradition of focusing on product quality, functionality, and technology, and because German products have historically been known for their quality (Juran, 1996). Quality is further driven by the dominance of engineers throughout the ranks of German firms. The focus of German firms "is a standing, prestigious, articulate lobby for design, development, production and quality; for those things in short which German industry is internationally rated" (Lawrence, 1980, p. 187).

The reputation for quality of German products was so well known that, in the early 1900s, manufacturers form other countries sometimes attempted to

communicate that their output was of the highest quality by placing the Made in Germany tag on their products. To counter this practice, and prevent other foreign countries from unfairly capitalizing on, and damaging the reputation of, German product quality, in 1925 the Germans formed an association called *ReichsAuschuss fur Lieferbedingen* (RAL). The purpose of the RAL was to certify and recognize German quality products by use of a distinctive mark. Although the use of this mark was not mandated by law, it quickly became widely recognized as the mark of quality, and became widely used by German manufacturers (Juran & Gryna, 1988; Juran, 1996).

In 1969, Germany again demonstrated its commitment to product quality, by enacting the world's first national legislation specifically related to the use of quality management practices. The legislation requires "statistical methods of evaluation, including the control of the production process by the use of statistical methods" (Juran & Gryna, 1988, p. 35D.6) in manufacturing processes.

Section 2: Developments in Japan between 1945 and 1982

The Occupation: 1945 - 1952

It was August 15, 1945:

> The only things left protruding from the earth were iron safes and concrete chimneys . . . In each large city [in Japan] the pattern was the same: a score or two of reinforced-concrete multistory buildings, weathered but intact, scattered about near the city's center, then a concentric belt, several miles wide, of total devastation . . . The food situation was highly problematical if not desperate. Everyone tensely calculated how long his own family's hoarded kitchen stocks would last and when the inevitable famine would strike the cities . . . Most felt with the war lost, matters were now out of their hands (Cohen, 1987, p. 5).

The intense bombing of the last year of the war, culminating in the atomic bombing of Hiroshima and Nagasaki, had devastated the Japanese landscape, but the psychological devastation on the Japanese people, like the Germans, was also terrible. But the source of their psychological pain was different from the Germans: as a nation, the Japanese were not repentant for their part in

WWII. They had, at the behest of their Emperor, entered the war in the belief that they would be making their nation greater — and, to the Japanese, the Emperor and the nation of Japan are both objects of spiritual veneration (Schonberger, 1989).

The sources of their psychological pain was that their Emperor had been stripped of his official power through foreign decree; plus, what was to them, the blasphemous situation of their nation being controlled by foreign occupants. With the unconditional surrender [5] of Japan, Japan was controlled by the Occupation forces under the direction of the Supreme Commander of the Allied Powers (SCAP),[6] United States General Douglas MacArthur. Moreover, the Japanese were humiliated by being economically dependent on the United States, whom they saw as the nation principally responsible for their pain (Cohen, 1987).

According to Acheson (1969, 1979) and Schaller (1985) during the period of United States Occupation of Japan (1945 -1952) the focus of reform changed three times to reflect changing conditions in the world's economic, political, and

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[5] According to the wording of the Potsdam Declaration, Japan's surrender was not unconditional. However, the terms imposed by the Occupation under the direction of the United States Government indicates that Japan's surrender was unconditional (Schaller, 1985).

[6] SCAP is the term used popularly to describe the Occupation forces under the direction of General MacArthur.

military landscape. The first policy period was from 1945 to 1948, during which time the principal reforms focused on developing democratic structures and institutions. The second policy period of reforms was from 1948 to 1950, when the reforms focused principally on economic re-development. The third period of policy reforms, which began in 1950, reflected the decision by the United States to make Japan its principal strategic, economic, and political ally in its efforts to contain communism in Asia. Although the Occupation of Japan ended in 1952, completing the objectives of policy initiatives from the third period lasted until 1970.

The first United States policy period of reform: 1945 - 1948

Directive JCS 1380/15 defined United States policy, objectives, and "programmed the operations of GHQ (General Headquarters) with respect to the Japanese from top to bottom" (Cohen, 1987, p. 11). The overriding theme of the directive was clear: democratize Japan. The initiatives identified in JCS 1380/15 to affect this included "the breakup of nationalist organizations, political liberalization, freedom of speech and assembly, removal from office and disqualification of undesirables, abolition of secret police, industrial disarmament, economic and labor democratization,[and] educational reform" (Cohen, 1987, p.12). The objectives were to remove all sources that could possibly lead to any future military aggression by Japan, and to instill in the people of Japan

democratic ideals (Schaller, 1985). According to Schaller (1985) the objectives of the United States military Occupation were unprecedented, with one exception, the similar and concurrent process occurring in Germany.

In addition to the demilitarization process, which included a purge of militarists and institutions that supported the militarists, some of the more salient reforms found by Kawai (1960), Furstenberg (1974), Mikiso (1982), Christopher (1984), Inoue (1985), Schaller (1985), Cohen (1987), and Dower (1992) that were implemented between 1945 and 1948 included the drafting and implementation of a democratic constitution, land reform, liberation of the working class, education reform, and the deconcentration of industry. Each of these reforms and their impact on Japanese institutions and society are discussed below.

The drafting and implementation of a democratic constitution. In 1946, Japan's Meiji constitution of 1889 (which provided for a constitutional monarchy) was replaced with a new democratic constitution, which was modeled after the United States Constitution. Under the new constitution the Emperor no longer held sovereign power, but was instead considered to be a national symbol responsible to the Diet (Dower, 1993); and the collective power of the Diet was changed from being advisory to being the highest power in the State. The new constitution provided that the members of both houses of the Diet would be elected directly, that there would be an independent judiciary, and that the nation

would be permanently demilitarized. It also included a bill of inalienable rights, guarding basic freedoms (Kawai, 1960).

There was considerable debate concerning Japan's Emperor. Many in the United States government argued that the Emperor should be tried as a war criminal. The prevailing view, however, was that the Emperor's extraordinary power and influence over the Japanese people, which came from the Japanese belief that the Emperor was descended from one of the Shinto gods, could be used to advantage. Japanese resistance to the new democratic reforms, which were being developed and implemented by the Occupation forces, could be mitigated by having the Emperor endorse these reforms (Morton, 1970; Christopher, 1984).

Land reform. In 1945, more than 40% of Japan's workforce was engaged in agricultural production, however, nearly half of all land was cultivated by tenants (Furstenberg, 1974). These tenant farm workers lived in poverty, and there were frequent outbreaks of unrest. In 1946 the Farm Land Reform Law was passed, paving the way for carrying out land reform, which took place between 1946 and 1950. This law banned the absentee landlord and ended Japan's last vestiges of its feudal system (Mikiso, 1982). The Land Reform, which "was a critical step in achieving an expanded domestic market and mature bourgeois capitalism system in Japan" (Dower, 1992, p. 60), would not have been possible without the

authority of the Occupation.

Liberation of the working class. A large portion of the Japanese working class had been exploited and oppressed under the militarist regime. "A liberated working class was envisaged as constituting the backbone of the kind of democratic society which the Occupation hoped to foster" (Kawai, 1960, p.160). Japan's Trade Union Law of 1945, which is based on the United States National Labor Relations Act of 1935, gave labor the right to organize, engage in collective bargaining, and to strike. The Occupation did not foresee the popularity of this reform, probably underestimating labor's previous exploitation and oppression. Seven million workers, almost 50% of the work force, had joined unions by 1949 (Cohen, 1987). Also unforseen and unprecedented were the demands and tactics used by communist affiliated labor leaders, which were followed by strikes that endangered the success of Japan's economic reforms. To counter these counterproductive behaviors, The Trade Union Law was amended to be more restrictive, and to specify that United States aid was contingent on removing non-cooperative labor leaders, and any Communist affiliated labor leaders (Cohen, 1987).

Education reform. Universal literacy has been a policy in Japan since 1872, when Japan established a public school system with compulsory elementary school attendance. Because the system was centrally controlled, and because it

had the objective of educating children to be useful servants of society (rather than fostering the development of the individual), SCAP found the system deficient as an instrument for democracy. SCAP implemented numerous changes, most borrowed from the United States system, which included: extending the period of compulsory attendance through junior high school; primary and secondary schools were made co-educational; and curriculum changes were made to courses that had previously inculcated authoritarian or ultra nationalistic ideas. The changes were controversial, particularly curriculum changes that focused on individualism (Kawai, 1960).

Deconcentrating industry. Kawai (1960) argues that the most controversial of the economic reforms was the reform to eliminate and prevent the resurgence of excessive concentrations of economic power by dismantling the *zaibatsu*. The controversy was founded in the diametrically opposing beliefs in the United States and Japan on the ramifications of monopolies and oligopolies. A zaibatsu was a Japanese enterprise, with a pyramid organizational structure, controlled through a holding company and owned by a wealthy Japanese family. At the end of WWII the four largest zaibatsu, owned by the Mitsui, Mitsubishi, Sumitomo and Yasuda families, accounted for one quarter of Japan's paid in capital (Inoue, 1985).

The Antimonopoly Law, which was based on United States antitrust laws, was passed in 1947, and defined the rules for deconcentrating industry. Neither the Japanese Government nor the United States Government supported passage of the Antimonopoly Law, because they believed it would impede future initiatives directed toward economic recovery. General MacArthur, however, believed that dissolving the zaibatsu was necessary to preserve the new democratic reforms and (disregarding the opposition of the United States Government) proceeded to convince the Japanese Government to pass the Bill (Schaller, 1989).

Because of the changing political conditions in Asia, MacArthur, the Japanese Government, and the United States Government agreed on a compromise that reduced the original scope of the reform for deconcentrating industry. Instead of dissolving all of the zaibatsu, only the largest were broken up. Smaller zaibatsu were punished for aiding the militarists, but were allowed to continue to operate and play a role in economic recovery (Schaller, 1989; Dower, 1993).

The second United States policy period of reform (1948 - 1950)

Beginning in 1948 the focus of United States policy changed from one of democratic reform, to support for a program of economic re-development. These changes reflected a growing concern for the increasing levels of support for communism in the Peoples Republic of China (PRC), rising levels of concern

over acts of aggression by the Soviet Union, and a perceived need to minimize the long term economic dependance of Japan and other Asian nations on the United States (Acheson, 1969).

The United States hoped to use an economic re-development program (which was modeled in part on the Marshall Plan) to restore the Eurasian balance of power, which had tilted toward the Soviet Union. The program targeted Japan (the region's only industrial power) as the nation central to regional economic recovery, and saw Japan playing a leading role in the development of Asia, in much the same way as the Marshall Plan saw the role of Germany in Europe. Initiatives taken in support of focused economic redevelopment included: programs for rebuilding industry, including several hundred million dollars in grants and commodity credits; the end of war reparations; limited social welfare; the ending of wage controls; and initiatives to build up exports (Acheson, 1969; Schaller, 1985).

The third United States policy period of reform (beginning in 1950)

In 1950, United States policy in Japan again underwent a major change. According to Acheson (1969), Schaller (1985), Cohen (1987) and Schonberger (1989) this change was precipitated by three events that triggered the beginning of the Cold War in Asia: (1) The civil war in China, which resulted in the PRC

adopting a communist form of government; (2) The signing, by the PRC and the Soviet Union, of a thirty-year treaty of friendship; and (3) The Korean Conflict, which became an increasingly important factor in United States foreign policy.

These three events resulted in a reversal in United States foreign policy. Just as the Soviet Union had replaced Germany as the primary threat to peace in Europe in 1948, China and the Soviet Union replaced Japan as the primary threat to peace in Asia in 1950. Prior to 1950, United States policy designated China as the United States principal strategic ally in Asia to contain Japan. After 1950, this was reversed, and the United States designated Japan as the United States principal strategic ally in Asia — to contain the threat of communism (Acheson, 1969).

This change in United States foreign policy represented the key turning point for Japan's rise in national competitiveness. The impact of the policy change was felt immediately, because the Korean Conflict generated enormous requirements for supplies for the U.N. forces, most of which were purchased from Japan. Between 1950-1954 the United States purchased close to $3 billion dollars in military supplies from Japan for the Conflict. The effect of these purchases was reflected in increasing levels of economic production: in 1946 economic production was 25% of pre-WWII levels, by 1951 it had risen to 99%, by 1953 it was 135% (Mikiso, 1982).

From the end of the Korean Conflict in 1954, through 1970, the United States purchased $7 billion in military supplies from Japan (Schonberg, 1989). These ongoing orders for military supplies from 1950 to 1970 created a "large stable demand for high-technology, and heavy export goods, thereby subsidizing the expansion and modernization of Japanese industry" (Schaller, 1985, p. 295). These ongoing United States purchases from Japan were consistent with the United States foreign policy goal for Japan to be the regional economic dominant.

The Japanese were highly motivated to free themselves from their foreign occupiers, to eliminate their economic dependency from the United States, and to restore the respect of their revered nation. To do this they became motivated and focused on winning a new war, a war not for economic independence but for economic supremacy . The focus of their competition for economic supremacy was the United States (Cox, 1997; Garten, 1992).

When the Occupation of Japan ended in 1952, the United States was satisfied with the situation in Japan. Japan was becoming increasingly democratized, the Japanese government was conservative and the Japanese were anti-communist, progress was being made toward Japan's economic recovery, and the "United States-Japan economic cooperation agreements had transformed Japan into America's key military and economic ally in Asia which no other power in the

region was strong enough to challenge" (Schonberger, 1989, p. 279).

Post Occupation: 1952 - 1982

With the systems for democracy in place, and the economy fueled by the military requirements of the Korean Conflict, Japan was positioned to begin its continuous rise in national competitiveness, which would lead it to a position as the world's second largest developed and influential economy. This rise was due, to a large degree, to historical, social, cultural, and political factors (Ohmae, 1982; Hall & Hall, 1987; Lodge & Vogel, 1987; Competitiveness Issues, 1993; Charkham, 1994). These factors influenced, either directly or indirectly: government policies and practices; financial practices; business and managerial practices (including corporate structure and governance, labor and management practices, education and training practices; organizational behavior and quality management practices), and Japan's national competitiveness.

The following section discusses the influence of historical, social, cultural and political factors on government policies and practices, financial practices, and business and managerial practices on Japan's national competitiveness.

Government Policies and Practices

This section covers three areas of government policy and practice that have been found by Johnson (1982), Ohmae (1982), Porter (1990) and Competitiveness Issues (1993) as central to the rise in Japan's national competitiveness: These three areas are: (1) Industrial Policy; (2) The role of the Ministry of International Trade and Industry (MITI) in Industrial Policy; and (3) Antitrust.

Industrial policy. Lodge and Vogel (1987) and Garten (1992) describe the relationship between government and industry in Japan as cooperative, with both groups working collaboratively toward the common objective of strengthening the nation. Guiding this objective is Japan's Industrial Policy, which is revised every ten years to meet changing conditions and national objectives for the economy and employment (Johnson, 1982).

Japan's Industrial policy in the 1950s focused on economic recovery and included initiatives for hard currency capital accumulation, the development of the infrastructure, and assisting targeted industries to achieve long term market share goals. There were two major thrusts to this policy. The first was to protect infant industries through the use of import controls; the second was to stimulate areas of targeted development through fiscal, monetary, and tax policies, such

as grants, low interest rate loans, and tax breaks (Johnson, 1982).

Japan's industrial policy in the 1960s was motivated by membership in the OECD, and focused on the development of international trade. Policy initiatives included trade and capital liberalization, and initiatives to increase economies of scale. The two economies of scale related initiatives were: (1) the Japanese Industrial Standards (JIS) were defined to facilitate the focus of Japanese firms on producing marketable features instead of basic design; and (2) measures to increase consolidation of Japanese businesses, which included the relaxation in the enforcement of Japan's Antimonopoly Law (Tsuruta, 1985). The success of these relaxation measures was apparent in a 1970 report, which showed that 30% of corporate assets were closely associated to six of Japan's industrial groups (*keiretsu*). It is also of interest to note that all of these *keiretsu* had strong historical ties to the pre-war zaibatsu (Dower, 1992).

MITI's role in Industrial Policy. The Ministry of International Trade and Industry (MITI), was created after WWII with a mission to make Japanese industry competitive in world markets. It carried out its mission by overseeing the direction and development of industrial policy. In the immediate post WWII period, MITI's role was active and controlling toward industry as it directed the flow of capital into strategic sectors, limited foreign entry, managed currency exchange, developed export opportunities and negotiated licenses for foreign

technology. As economic conditions improved and industry became more self-reliant its role lessened to what has been characterized as a role of providing signals to industry that help them to identify opportunities and that propose directions that are consistent with defined national objectives (Kazuo, 1960; Ohmae, 1982; Porter, 1990).

Though MITI's role has diminished over time, its characterization as a "signaler" is understated. MITI tracks the progress of industry toward meeting MITI's desired outcomes. If it believes that progress is slow, or that there is too much competition it coordinates policies toward targeted industries. These policies include, *inter alia*, regulating interest rates, granting major tax concessions for export income, and placing restrictions on imports (Competitiveness Issues, 1993).

MITI has played a significant role in making Japanese industry competitive in world markets, however, because MITI's policies and initiatives must also meet national goals for employment, education and social welfare, some initiatives have in fact adversely affected Japans national competitiveness. For example, MITI's directions on government sanctioned cartels in industries such as agriculture, commodity chemicals, construction and food continue to inhibit the international success of these industries; and MITI's direction on the regulation of health care and education policy has been significant in constraining the growth

and development of these industries (Porter, 1990).

As a government department concerned with the overall welfare of a nation, MITI's view is broader than industry's. At times, MITI's view is so broad that it can miss significant details about underlying market mechanisms. For example, in the early 1970s, MITI proposed a consolidation of the automobile industry, the controlling of production, and limiting the number of car models. The auto industry fought this initiative, and MITI ultimately acquiesced (Tsuruta, 1985).

However, MITI's broad perception from the top has been credited with at least three focused national strategies, which have been key to developing Japan's national competitiveness. In the early 1950s the steel industry was targeted for development. MITI communicated this to the nation by coining the slogan "Steel is the nation" and encouraging aggressive investment in steel. Their rationale was that effective production of steel would have a wide ranging impact on a variety of key industries including automobiles, ship building, home appliances, plants and machine tools (Ohmae, 1982).

In the 1970s, MITI focused on semiconductors and Very Large Scale Integration (VLSI). Again MITI drew attention to the new industrial policy by creating a representative slogan, VLSI as "the rice of industry." The rationale for the focus on VLSI and semiconductors was driven by the belief that VLSI circuits and

semiconductors were (like MITI's focus on steel) fundamental to the success of several industrial sectors, including the very high growth computer industry (Ohmae, 1982).

In the 1960s and 1970s MITI launched a nation wide quality improvement campaign (Kondo, 1996). One indication of the success of these campaigns is the number of companies from the targeted industries that have been recipients of Japan's national award for quality, the Deming Prize. These companies include: Fuji Iron and Steel, Yawata Iron and Steel, Nippon Electric, Kawasaki Steel, Mitsubishi Electric, Matsushita Electric, Nissan Motor Co., Sumitomo Electric Industries, Toyota Motor Car Co., Ricoh Co., Hino Motors, Fuji Xerox, and Yokogawa Hewlett-Packard (Deming Prize 40, 1990).

In addition to slogans and quality improvement campaigns Jacobson & Hillkirk (1986) argue that MITI's efforts in the steel, computer and semiconductor industries were also aided by significant financial assistance. Jacobson & Hillkirk (1986) found that MITI sponsored government loans provided 40% of the Japanese steel industry's investment money and that in order to help Fujitsu and other Japanese firms compete with IBM, in 1961, MITI established the Japanese Electronic Computer Corporation (JECC), a fifty-fifty joint venture between government and industry. Over the next twenty years, JECC purchased more than $7 billion in computers from Japanese firms, then leased them to end users.

"In 1975, MITI organized Japan's leading chip-makers into two groups — NEC-Toshiba and Fujitsu-Hitachi-Mitsubishi — to challenge the United States in the race for the next generation of memory chips . . . By 1980 . . . Japan held 70% of the marketplace" (Jacobson and Hillkirk, 1986, pp. 99-100).

The success of MITI's implementation of Japan's Industrial Policy initiatives has been demonstrated through the increases in market share that have been achieved by Japanese steel, semiconductor, automobile, machine tools, ship building, and electronics industries, and also by the corresponding decline the United States market share in these industries (Ohmae, 1982; Jacobson & Hillkirk, 1986).

Antitrust. Subsequent to the passage of the Antimonopoly Law in 1947, it was modified and a number of exceptions were added; it has been loosely interpreted; and the Japanese government has been lax in its enforcement (Caves, 1976; Eisenstadt, 1992). The Antimonopoly Law does not take precedence over Japan's industrial policy or economic goals, but rather is modified or interpreted to accommodate them. Japan's actions with respect to this Law are consistent with the Japanese belief that their implementation of large trusts is not anti-competitive nor is it un-democratic. In fact, to the contrary. Because a principal objective of government and industry is to strengthen the nation against foreign competition, they see large trusts being in the national

interest by making Japanese industries stronger and therefore more competitive (Garten, 1992; Brush, 1995).

Financial Practices

Immediately following WWII, Japan had limited capital with which to begin economic redevelopment. Capital formation took place quickly, however, as a result of government regulation and the high savings rates of the Japanese. By the 1960s low interest loans from banks were available to finance high levels of capital investment for Japanese industry. In the Post WWII period the Japanese saved on average between 14-22% of their take home pay (Royama, 1992; Charkham, 1994; Prowse, 1994). Royama (1992) states that high rates of savings are motivated by a combination of factors including: a tax system that encourages saving over spending (the *maruyu* rule), mandatory retirement at the age of 55 (executives are exempt), and payments to retired persons from entitlement programs or retirement pension plans that are insufficient to cover even minimal living costs.

High capital formation rates and supporting policies from the government and the Bank of Japan have made bank financing attractive, and have contributed to the preference that Japanese firms have placed on bank financing. Each company normally has a bank, which maintains up to date information on company

operations and strategic plans, takes a proactive role in providing financial services for its client, and acts as the lead bank when a client needs a multi-bank borrowing or investment (Competitiveness Issues, 1992; Charkham, 1994).

Equity ties also contribute to the close relationships between Japanese industry and Japanese banks. Banks are often significant stockholders in companies, owning about 25% of common stock. According to Charkham (1994) banks take significant shareholder positions for two reasons: one reason is to cement relationships with their client companies; the other reason is to strengthen the bank's position, if and when problems surface that could threaten the company's ongoing operations and the bank's debt and equity investments.

Business and Managerial Practices

The practices covered in this section reflect business and managerial practices that have been found by Kawai (1960), Furstenberg (1974), Takeuchi (1985), Ishikawa (1987), Cohen (1987), Schonberger (1989), Porter (1990), JETRO Monitor (1992), Competitiveness Issues (1993), Charkham (1994), Juran (1996) and Kondo (1996) to have had a significant impact on Japan's national competitiveness. These practices include: Corporate Structure; Corporate Governance; Labor and Management Practices; Organizational Behavior Practices; Education and Training; and Quality Management Practices.

Corporate Structure

For more than 300 years the structure of Japanese industry was based on the *zaibatsu* system. The break up of the zaibatsu, an outcome of the democratic reform initiatives of the Occupation, was facilitated through the passage of The Antimonopoly Law of 1947. The intent of the Law was not simply to break up the excessive concentrations of economic power held by the zaibatsu, but also to prevent any future excessive concentrations of economic power. To achieve this, the Law imposed a prohibition on Japanese banks from owning more than 5% of another firm's stock, and also prohibited the existence of holding companies (Competitiveness Issues, 1993). Japanese corporations found that these prohibitions made it difficult for them to attract stable shareholders (that is, shareholders that hold rather than trade their shares), which made it difficult to develop and implement long term strategies, which in turn jeopardized the company's ability to meet its principle objective of serving employees and the nation. To comply with the Law, and still achieve corporate objectives, Japanese corporations collaborated to develop a system characterized by corporate cross-ownership of equity, called the *keiretsu* system (Kawai, 1960).

The JETRO Monitor (1992) describes the cross-ownership in the keiretsu system taking place at two levels: (1) Cross ownership by members within a keiretsu, and (2) Cross ownership with members of other keiretsu. Cross-ownership of

shares prior to 1960 accounted for approximately 40% of all shareholding in Japanese publicly held companies. This percentage increased following the late 1960s, when the Japanese Government, at the behest of its foreign trading partners, loosened restrictions on foreign ownership. The net effect has been that the percent of stable shareholding (that is, shares that are not normally traded), is now between 60% and 80%. This means that the float (shares actually available to be traded on the stock exchange) is limited to between 20% and 40% of a company's issued and outstanding shares (Kovacic, 1992; Competitiveness Issues, 1993).

In addition to a stable shareholder base and stabilizing trading in the company's shares, the keiretsu system offers many other strategic advantages to Japanese industry and commerce, and is considered to be a significant factor in Japan's rising national competitiveness (Thurow, 1991; Rapoport, 1991). Professor Kunio from Hitotsubashi University summarized in the JETRO Monitor (1992) the strategic advantages and rationality inherent in the keiretsu system as follows:

(1) The establishment of a dependable, stable relationship, through the continuity of transactions and through the establishment of a guaranteed market for new and untested products and technology.
(2) The promotion of information accumulation and sharing.
(3) The motivation of suppliers to invest in the development of new

technology.

(4) The joint development of new products, which facilitates the timely development of new technologies and products, and the sharing of risk.

(5) The cross holding of shares eliminates the concern of hostile takeovers, and enables a focus on long term market share growth.

Corporate Governance

According to Charkham (1994) and Prowse (1994) corporate governance practices in Japan has contributed to the development of corporate structures that are able to effectively implement long term growth strategies that have aided the execution of Japanese industrial policy and which has contributed to increasing Japan's national competitiveness. Charkham (1994) and Prowse (1994) have noted four primary groups that provide regular input into the development of long term growth strategy, and management of the Japanese corporation.

(1) The board of directors are elected by the shareholders and are responsible for the ongoing success of the corporation. Directors are normally executives who work for the corporation (that is, they are employees, which means that in the United States they would be called *inside directors*, rather than *outside*

directors). It is a common practice for some board members to have been previously employed by government ministries or powerful banks. This practice is called descent from heaven *(Amakaduri*).

(2) The monthly meetings between top management and large creditors and shareholders, although not a formal governing structure, are a significant influence on policy and planning.

(3) The regularly occurring President's Club meetings, between management and large shareholders, are forums for information sharing.

(4) The General Meeting of the Shareholders is the legal governing forum for a corporation, however Japan's system of "stable shareholders," and the fact that Japanese companies see their primary goal of serving their employees and the nation, rather than their shareholders, has made the General Meeting of the Shareholders largely ceremonial.

A fifth group, that may provide input into the management of the Japanese corporation, is the company's bank or banks. The role of the banks in matters of corporate governance, however, varies widely depending on the company's success, situation, and needs. Banks play a small role in the management of established, prosperous companies, whereas this role increases in the case of a

company that is newer or less successful. Companies that are in trouble may lose control to their main bank, if rescue operations, merger arrangements, or liquidation activities become necessary (Garten, 1992; Charkham, 1994).

Labor and Management Practices

During the late 1940s and early 1950s, frequent strikes by labor inhibited economic recovery, but also served to warn Japan's business leaders that the modernization of Japan required the cooperation of labor. Several changes were introduced to win Labor's cooperation. These included: the Trade Union Law of 1945; the creation of the Japan Productivity Center (to provide a neutral forum for industry, government, academia, and labor to meet and jointly develop plans consistent with national goals); and management's agreement to provide secure employment, and to place labor representatives on boards of directors. Since the introduction of these changes, the relationship between management and labor has been non-adversarial, cooperative and collaborative (Cohen, 1987).

The most significant factor that has contributed to the strong and positive relationship between labor and management, however, is probably the recognition by Japanese management that human resources are their most strategic asset (Porter, 1990; Garten 1992). The recognition of this fact has

driven the development of many Japanese management practices, which include: an emphasis on employee education and training; consensus based decision processes; a belief in longevity of employment for all employees (not just those who have lifetime employment commitments from the company); and the power of the human resource department (Amaya, 1983).

Organizational Behavior Practices

Japanese organizational behavior reflects its history, and unique society and culture. This section describes ten distinctive Japanese practices that have been found by Kawai (1960), Furstenberg (1974), Ohmae (1982), Amaya (1983), Christopher (1983), Takeuchi (1985), Imai (1986), Ishikawa (1987), Cohen (1987), Schonberger (1989), Porter (1990), JETRO Monitor (1992), Bleeke & Ernst (1993), Competitiveness Issues (1993), Charkham (1994), Juran (1996) and Kondo (1996) to have a significant impact on Japanese national competitiveness. They are: (1) Corporate *raison d'etre*; (2) The *ringi* process; (3) Receptivity to foreign practices and technology; (4) Mutual commitment between employer and employee; (5) Research and development activities; (6) Long term commitments between suppliers and buyers; (7) The ability to compensate for natural limitations by innovation; (8) Mergers & acquisitions; (9) Sophisticated use of information; and (10) Ferocity of competitiveness in Japan's domestic market.

The *raison d'etre.* The *raison d'etre* of a Japanese company, to benefit its employees and the nation, is grounded in widely embraced Buddhist and Shinto beliefs. Buddhist belief discourages the pursuit of wealth for individual purposes (Furstenberg, 1974). Shinto beliefs hold: (1) a reverence for the Japanese nation and the divine origin of the Japanese people; and (2) a reverence for the Japanese nation and the Imperial Family as head of the nation (Severly and Fishbein, 1971).

Hierarchy, consensus and the *ringi* process. The Japanese give close attention to hierarchical position, and show deference based on position. Despite this, with very few exceptions, decision processes are consensual. Consensus is derived through a process the Japanese call *ringi*. *Ringi* is a complex consultative and collaborative process that brings all organizational members, from all levels in the hierarchy, into the decision process. The *ringi* process is credited with contributing to the ability of Japanese companies to make well informed decisions, which include long term, substantive commitments (JETRO Business, 1992). For United States corporate executives, however, the lengthy *ringi* process has often been the cause of considerable frustration, which has contributed to their lack of success in concluding alliances and other substantive transactions with Japanese institutions (Bleeke & Ernst, 1993).

Receptivity to foreign practices. In 1853, the arrival of Admiral Perry in Japan signified the end of Japan's self-imposed isolation. Since that time, the Japanese have made the most of foreign contributions, and since WWII have aggressively searched for the best foreign practices to adopt or adapt. One popular technique for achieving this has been to send people abroad to study and locate appropriate technology, and to then acquire this technology by negotiating rights to the patents or licenses (Schonberger, 1989; Porter, 1990).

The Japanese were enormously successful with this practice, and in particular in the United States. Following WWII, United States businesses forewent direct investment opportunities in Japan, opting instead for more familiar, and what they viewed as more certain markets. Oblivious to the fact that they were nurturing future competition, United States firms exchanged royalties for trade secrets, fabrication rights, and engineering know in industries such as chemicals, oil, electronics, and engine construction; and negotiated numerous technological assistance programs. "These royalty based transactions gave United States companies a large stake in the growth of higher quality Japanese production and the expansion of Japanese trade" (Schonberger, 1989, p. 284).

Mutual commitment. Japanese lifetime employment practices (one third of Japan's workers have exchanged lifetime commitments with their employers), and a general commitment by Japanese corporations to employment longevity,

have resulted in a preference for internal diversification (as opposed to mergers and acquisitions) to meet requirements for new areas of growth and expansion (Amaya, 1983).

The Japanese preference for internal diversification requires flexible deployment of human resources. This is facilitated by Japan's compensation system that ties salary to seniority, eliminating the normal problems inherent in a system of job rotation.

Fostering adaptable human resources is the responsibility of the very powerful human resource department. The Human Resource Manager holds a very high position in the Japanese management hierarchy, and is frequently the next in line for the CEO position. Japanese companies believe that the greatest advantage in Japan is obtained with well trained, adaptable human resources (Itami, 1985). The reciprocal commitment from employees to their employers is demonstrated through the high priority placed on work and their identity with their employer (which frequently comes before family). The latter point is clearly illustrated in the practice of how Japanese workers define who they are. For example, a university professor, Mr. Yamada, from the University of Tokyo, would respond to the question "Who are you?" with "I am Tokyo University's Yamada" (Takeuchi, 1985).

In the rare situation where a Japanese company decides that downsizing is necessary, the President resigns, because he or she is the person who holds ultimate responsibility for the welfare of the company's employees. If pay reductions are necessary, senior management will be the first to take reductions (and will also take the largest reductions), since the health of the firm is their responsibility (Takeuchi, 1985).

Research and development. In Japan the principal source of funding and the principal provider of research and development (R&D) is private industry. Eighty percent of R&D takes place as cooperative initiatives, and cooperative research projects among competitive companies is common for the development of emerging technologies. For example, the rapid and successful development of VLSI technology was a cooperative project among Japanese competitors. In general, government funding of R&D is small and limited to supporting a series of national R&D laboratories (Competitiveness Issues, 1993). The government has been known to play an encouraging role between rival firms that are adverse to a cooperative R&D effort in industries targeted for development in industrial policy (Ohmae, 1982).

Relationships between buyers and suppliers. Buyers and suppliers are normally clustered in close geographical proximity. Supplier selection is an in-depth process that ensures selection is limited to the best candidates. Once

selected, buyers and suppliers develop long term stable relationships. These relationships are multi-faceted and include: education and training programs, sharing in the strategy development process, sharing product plans, and exchanging personnel between firms. The close communication that results from this relationship building has contributed directly to the success of Japanese initiatives, such as just-in-time (JIT) inventory practices. This close communication also facilitates the development by suppliers of innovative products, components, and processes that are specific to the needs of the buyer (Porter, 1990).

Overcoming limitations by innovation. The Japanese approach to innovation and adaptation supports the argument that necessity is the mother of invention. Many innovations and adaptations in Japanese business and managerial practices have resulted from its need to overcome limitations, including its limited natural resources, its isolated location, and (ironically) the strength of its currency. Shortages of usable land has resulted in innovations in miniaturization, efficient inventory practices (such as JIT), and flexible manufacturing; and energy efficient products that were developed in Japan long before the global oil crisis in the 1970s. Japan's isolated location has resulted in innovations in logistics. The strength of the Japanese currency, which adversely affected its ability to export by making its products seem expensive in foreign markets, has motivated continuous efforts to increase productivity and to drive

down costs in all areas of the product development and distribution process (Imai, 1986; Juran, 1996; Porter, 1990).

Mergers and acquisitions. Mergers and acquisitions are often encouraged and arranged by Japan's major banks, or by MITI, in efforts to preserve troubled Japanese companies, or to strengthen an industry to improve its ability to succeed against foreign competition. However, "no one, Japanese or foreign, has launched a successful take-over bid over the heads of incumbent management" (Charkham, 1994, p.108) in Japan. There is a consensus in Japan that hostile takeovers, that is takeovers that are not welcomed by management, are contrary to Japanese ethos and socially impermissible (Adams & Brock, 1989).

Sophisticated use of Information. The Japanese have a voracious appetite for foreign and domestic information, which has produced a well developed mass media and mass advertising industry (Christopher, 1984; Ruch, 1984; Porter, 1990).[7] The appetite for, and availability of, information has led to a society of consumers that are demanding and knowledgeable, and who seek quality products with the latest features. Japanese industry is continually motivated to innovate to meet market demands; and Japanese industrial buyers, like

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[7] This expertise in mass media has also had significant benefit for promoting products to foreign markets (Christopher, 1984).

Japanese consumers, are knowledgeable and demand sophisticated quality products (Porter, 1990; JETRO Marketing Series, 1993).

Ferocity of competitiveness in Japan's domestic market. According to Michael Porter (1990) this is the most significant contributing factor to Japan's continual strengthening in its national competitiveness. Before expanding sales to international markets, Japanese companies compete with each other with the goal of producing superior products at the lowest price. Porter (1990) argues that it is this intensity of Japanese domestic competition that makes it extremely difficult for foreign companies to compete in Japan, and is the principal factor in the success of Japanese companies in international markets.

Education and Training

The Japanese are taught at an early age the importance of education. Because a student's performance in primary and secondary school determines the university they will attend, and the university a student attends will be the single most important determinant of his or her career, grade competition among students in primary and secondary schools is intense. This has resulted in a rigorous learning environment. It is also at primary school that students are taught that because Japan lacks raw materials, foreign commerce is of central importance to Japan's continued economic success, and they are taught that for

Japan to succeed in trading with foreign nations, it must focus on continually enhancing its national competitiveness (Christopher, 1983; van Wolferen, 1989).

Consistent with the needs of industry, principal subjects of focus are math and science. A comparative study conducted by the United Nations in 1970, for member countries, ranked the Japanese first of all nations in science and math for ten and fourteen year old students (Christopher, 1983).

Primary, secondary, and university education programs are designed principally to provide general technical competencies. Specialized training is, in general, not emphasized in the educational system (Dertouzos, et al. 1989). With the exception of the engineering and science programs, university level education in Japan lacks the rigor of primary and secondary education (van Wolferen, 1989). The general lack of academic rigor in the university system has been interpreted by United States critics as a lack of quality, however to the Japanese it is in part by design. The university is not perceived principally as an institution for rigorous academic teaching, but as a place to network and build contacts that will be useful later in life. In addition, time spent at the university is a time for reflection and personal growth in between what went before (the rigors of their secondary school education) and what lies ahead (the life long commitment to their future employer) (Christopher, 1983; van Wolferen, 1989).

It is the future employer, not the university system that has primary responsibility for providing post-secondary education and training programs. Most employees join their employer at entry level, and then receive specialized training, over the years, through programs that are designed to meet ongoing skill requirements relevant to maintaining currency in their respective industries, and through job rotation within their company and, or, keiretsu (Amaya, 1983; Christopher, 1983; Dertouzos, et al. 1989).

Quality Management Practices

Because Japan has few natural resources, it is dependent on foreign sources for raw materials. Prior to WWII the Japanese relied on their colonies and on trade (primarily with Asian markets) to obtain raw materials. At the conclusion of WWII, Japan could no longer depend on their former colonies or their traditional trading partners. Chinese and Korean sources were lost due to civil wars and communist expansion; and other Asian trading partners, many who had been adversely affected (either directly or indirectly) by Japan's plan for the Greater East Asia Co-Prosperity Sphere, chose not to trade with Japan (Schaller, 1985). The closing of these areas of trade and sources for raw materials required that Japan look elsewhere. The markets of Europe were precluded by protectionist measures. The United States and its open market policy, on the other hand, provided the Japanese with a large potential market, and the opportunity they

needed to build their exports and rebuild their economy (Thurow, 1992).

This United States market opportunity presented two significant challenges. First, unlike the Germans who have a long history of exporting to western markets and who have a predisposition toward developing quality products, Japan had little experience with developing and exporting products for non-Asian markets. Second, there was a perception that Japanese products were of poor quality and, due to the high cost of acquiring raw materials, were priced uncompetitively (Kondo, 1996). To overcome these challenges, Japan would have to rapidly develop the knowledge and skills needed to manufacture quality products for western foreign markets in general and the United States market in particular. And, to compensate for their relatively high raw material procurement costs, they would need to master the processes of production (Imai, 1986).

Meeting these requirements in a compressed time period motivated the Japanese to search out and adopt, or, adapt successful methods for improving and managing the quality of their products. The Japanese were first exposed to statistical quality control (SQC) methods in 1948, by members of the Occupation forces (Juran, 1996). They immediately saw the broad application of SQC and, through the Union of Japanese Scientists and Engineers (JUSE), adapted and extended SQC practices to assist in correcting manufacturing quality problems throughout Japanese industry (Ishikawa, 1985). During the 1950s, the Japanese

borrowed the initial concepts and principles that they would use, to implement quality management practices, from United States experts. Their principal sources were Deming,[8] Juran, and Feigenbaum. Since then they have continually adapted, developed, and added to those initial concepts and principles (Ishikawa, 1985).

Garvin (1988) credits three of the most significant developments in quality management since the 1950s, to practices that have been contributed by Japan.

(1) Japanese manufacturers place emphasis on superior quality processes, through a practice they developed and call Quality Function Deployment (QFD). The initial success of Japanese manufacturers, in penetrating new markets, was popularly attributed to their practice of copying products from other countries. This allowed them to eliminate R&D costs, and to undercut their competitors' prices (and still make a profit). Although their "copy cat" reputation was accurate, it obscured the fact that Japanese companies were also reducing costs through superior production processes that resulted from the use of QFD.

(2) In 1962, Japanese manufacturers introduced a formal system for using

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[8] In 1950, JUSE invited an American expert in statistical quality control, G. Edwards Deming, to lecture. In 1951, JUSE created a national quality award, which they called "The Deming Prize." (Ishikawa, 1985).

quality control circles (QC circles) to improve the quality on the factory floor.

(3) In 1968, Japanese manufacturers greatly extended the concept and philosophy of total quality management practices defined by Juran and Feigenbaum, to encompass and integrate all company functions participating in the production process. This practice became known as company-wide quality control (CWQC), or total quality control (TQC).

In the 1960s and 1970s quality was included in Japan's industrial policy, and nationwide quality goals for industry were established (Kondo, 1996). These formal national endorsements further stimulated Japanese commitment to quality.

Section 3: Analysis

Sections 1 and 2 of this paper used an historical methodology to chronicle historical, social, cultural, and political developments in Germany and Japan, between 1945 and 1982, that resulted in government, legal, regulatory, financial, educational and training policies and practices, and in business and managerial practices, which influenced the rise in the national competitiveness of those two countries.

Section 3 uses an interdisciplinary comparative analytical methodology to examine the data developed in Sections 1 and 2, and to correlate this data with the decline in the national competitiveness of the United States. In this analysis no attempt has been made to prioritize, by order of importance, the factors that contributed to the decline in the national competitiveness of the United States. Rather, the analysis of factors is presented in a macro-to-micro progression, beginning with the most macro government factors (Foreign Policy), and ending with the most micro private sector factors (Business and Managerial Practices).

The analysis is presented in three parts:

Part I: Factors Related to Foreign Policy

The Cold War; the Reestablishment of the Regional Economies of Europe and

Asia; Democratization Programs; Military Spending Differentials; and Isolationism v. Internationalism.

Part II: Factors Related to the Business Environment

Antitrust; the Relationship Between Government and Industry; Financial Practices that Affect the Cost of Capital; the Availability of Natural Resources; Domestic Market Size; and Individualism v. Communitarianism.

Part III: Factors Related to Business and Managerial Practices

Research and Development; Corporate Priorities, Governance, and Structure; Education and Training; the Relationship Between Labor and Management; Supplier and Buyer Relationships; and Quality Management Practices.

Part I: Factors Related to Foreign Policy

1.1 The Cold War

Preventing the expansion of communism and defeating the U.S.S.R. politically, economically, and militarily, and winning the Space Race, were the most important objectives of United States foreign policy throughout the Cold War (Acheson, 1979). Powerful nations had historically focused commercial activity

as a means of increasing their power and influence, and had used their military power to further their mercantilist objectives; and even their territorial acquisitions were directed, in most cases to commercial ends (Kennedy, 1987). The United States, however, on emerging from WWII as the most powerful nation in the free world, became preoccupied by the Cold War, and defeating the Soviet Union at all costs, rather than achieving commercial objectives.

The priority given by the United States to the Cold War required that its political, emotional, and financial resources be focused on fighting communism, fueling its buildup of militarily capability, and putting a man on the moon, (this latter objective consumed not only $5 billion in financial resources but also some of the nation's greatest intellectual resources) at the expense of domestic and economic development (MacNamara, 1987; Porter, 1990; Thurow, 1992).

The United States assumed leadership in building and maintaining the global military forces that would protect the world from communist expansion and, what it saw as, the possibility of a third world war. The United States encouraged other free world nations to rebuild their economies, which it believed would be a better defense against the temptation of communism, than building their military. Germany and Japan were not only encouraged to give priority to economic development, as part of the democratic reforms implemented during the Occupation, they were restricted from developing a military capability (Price,

1955; Acheson, 1969; Mayer, 1969; Schaller, 1985; Cohen, 1987; Garten, 1987).

Although the other factors discussed in this analysis contributed to the rise in the national competitiveness of Germany and Japan, and the decline in the national competitiveness of the United States between 1945 and 1982, it would appear that the result was driven largely by the fact that Germany and Japan, on the one hand, and the United States on the other, had vastly different policy objectives. Germany and Japan shared economic recovery and economic development as their dependent variables, and were successful in achieving those goals. The United States adopted the defeat of communism and the propagation of democracy as its dependent variables, and was successful in achieving those goals.

1.2 The Reestablishment of the Regional Economies of Europe and Asia

In the late 1940s, the United States Government's policy shifted from providing relief programs for the war-torn economies of the world, to providing financial aid for economic recovery. The rationale behind this decision was that it was necessary to restore a balance of power in Eurasia, and to subdue and contain the communist influence of the Soviet Union and China (Zink, 1957; Acheson, 1969; Mayer, 1969; Acheson, 1979; Schaller, 1985; Cohen 1987).

The Marshall Plan, and an aid program for Japan, were designed by the United States as mechanisms for facilitating the rebuilding of the war torn economies, and restoring a balance of power. Fundamental to the plans were that Germany would be central to regional economic recovery in Europe, and Japan would be central to regional economic recovery in Asia. In May, 1947, Undersecretary of State Dean Acheson "pledged emergency aid to both the former Axis powers and their victims. America, Acheson announced, would reconstruct the two great workshops upon which the ultimate recovery of the two continents so largely depends" (Schaller, 1985, p. 97).

The decision to include Germany in the Marshall Plan, and Japan in a similar aid plan, was a deliberate goal of United States foreign policy aimed at restoring economic growth to these nations. These countries were selected ostensibly because of their political vulnerability, and because, visible destruction notwithstanding, these two countries were the most industrially developed and had the most highly skilled workforces in their respective regions. The United States, as occupier of both countries, was also able to exert considerable control over their development. It was the United States hope that these nations would be the regional economic dominants driving the economic developments of other nations in their region. United States policy makers reasoned that nations with growing economies would be the best defense against the lure of communism (Acheson, 1969; Acheson, 1979; Schaller, 1985).

The Marshall Plan was prepared by United States Government State Department officials working closely with European nations, establishing the objectives, implementation and operation of the economic recovery plan. The principal goal of the Marshall Plan was to restore economic growth. This goal was interdependent on achieving the objective of economic integration of western Europe, including Germany. The United States developers of the Marshall Plan relentlessly pursued the inclusion of this objective, against the initial objections of the European powers, because they believed that it was essential to the success of the economic recovery and to the ongoing stability and economic growth of western Europe (Price, 1955). The development of the details of the plan for Europe's economic recovery and integration, at the insistence of the United States, was the responsibility of the Europeans.

In the findings of Schaller (1985, 1989) and Schonberger (1989) there is absent any mention of a goal in the plan for Japan's recovery of economically integrating Japan into east Asia and no insistence that Asian nations should collaborate and take responsibility for their recovery plans. There was no United States insistence, or lobbying to the nations of east Asia, that Japan must be a key member in the east Asian economy.

And there was also no Marshall Plan equivalent for the economic recovery of Japan. The economic recovery of Japan was determined by a combination of United States policy objectives and the implementation of those objectives under what Schaller (1985) has characterized as the unpredictable direction of Douglas MacArthur.

The absence of a true plan for Japan's economic recovery, similar to the Marshall Plan, was a major omission by United States Government officials. At the end of the Marshall Plan, 1952, Germany's trading position within Europe was strong. Germany's economy continued to strengthen and Germany played a key role in fueling trade within Europe, it also became a member in good standing in the European community of nations. In 1952 Japan had made significant economic progress largely fueled by the requirements for military supplies for the Korean Conflict. But up until 1970, the United States continued to prop up the economy of Japan through the procurement (from Japan) of billions of dollars in military supplies.

Japan did not become integrated economically or socially into east Asia, and Japan's principal trading partner did not come from east Asia. Instead, Japan focused on developing its trade with the United States, which had a market that was unique in the combination of economic size and receptivity to Japanese products. The failure of the United States to plan for the integration of Japan into

the non-communist nations of Asia, which resulted in Japan focusing its competitive commercial efforts on the United States, contributed significantly to Japan's rise in national competitiveness, and the decline in United States national competitiveness.

1.3 Democratization Programs

During the period of Occupation, Japan and Germany both developed and promulgated new democratic constitutions, including a bill of rights protecting individual freedoms. Unlike Germany's previous experience with the Weimar Constitution, this democratic constitution has stood the test of time. For Japan, this was their first democratic constitution.

It is difficult to accurately assess the effect of these democratic constitutions on the rise in the national competitiveness of Germany and Japan, because there is no control against which we can assess what would have happened if these countries retained their pre-WWII political systems. Champions of democratic systems compare the success of West Germany and Japan to the economic failures in East Germany and North Korea, but this argument compares post-WWII democratic systems with post-WWII socialist systems, and does not compare either of these new systems to the political systems that existed in Germany and Japan prior to WWII.

It can be argued, however, that the post WWII systems of democratic government in Germany and Japan have provided political and social stability, which have allowed both of these nations to maintain momentum and continuity in the economic policies and programs that have contributed to their rise in national competitiveness. It could also be argued that democratization has benefitted the national competitiveness of Germany and Japan by creating a more free and open business and work environment. But the greatest contribution that the democratization of Germany and Japan has had on the national competitiveness of both countries, is that it allowed them to participate fully in the political and economic institutions of the free world.

One of the democratization programs that influenced the national competitiveness of Japan, albeit indirectly, was land reform. When the Occupation led land reform began in Japan in 1946, more than forty percent of the Japanese population were employed in agriculture, living in conditions of poverty and unrest. Land reform eliminated the unrest and poverty, and led to increased yields in agricultural production, which greatly expanded Japan's domestic market through increasing the size of the more highly paid industrial labor force (by 1969 only 18.8% of the population was employed in agriculture) (Furstenberg, 1974). Because the size and ferocity of Japan's domestic market is considered by Porter (1990) to be the most significant factor in Japan's rising national competitiveness, the land reform democratization program can be

credited with having contributed to increasing Japan's national competitiveness, because it contributed, at least in part, to the creation of Japan's domestic market.

1.4 Military Spending Differentials

Maintaining parallel goals of economic and military development has taken a toll on United States national competitiveness. Thurow (1992) maintains that "Spartan self-discipline is necessary if a country is to have both sustainable military and economic superpower status . . . And that in a country known for excesses the idea of Americans practicing "Spartan self-discipline" was antithetical to the American Way" (p. 20). The impact of parallel goals on United States national competitiveness has been compounded by the minor role that Germany and Japan have played in international military operations. In the post war era the United States has spent on average 2.5 times as much per capita on military expenses as Germany, and 3.4 times the amount spent by Japan (Ruckeyser, 1991).

1.5 Isolationism v. Internationalism

The United States had maintained a policy of isolationism until 1945, with only minimal deviations including a temporary retreat when it participated in the First

World War (WWI). At the end of WWII, however, the world had changed, the worlds view of the United States had changed, and the view the United States had of itself had changed. Flush with its success in WWII, and its new political, economic, and military power,

the United States replaced its policy of isolationism with a policy of active international involvement. Moreover, Dean Acheson (1979), shortly after leaving office as Secretary of State in 1954, argued that this change was irreversible:

> For we did not understand that the mold which gave us, from 1814 to 1914, a century of secure withdrawal from the world was broken beyond repair. The materials from which this protective mold was formed were the balance of power among the great nations of the world and the control of our surrounding seas by a nation well disposed to us. . . For a hundred years these factors confined the use of force localized and limited objectives and insured us that the sea around us should not be an avenue of attack.
>
> But in 1940 and 1941 we saw, for the second time, our ships destroyed within sight of our coast. Then, enemy blows in the Pacific came dangerously close to opening our western sea approaches. We learned that the oceans were no barrier to the

> new air attack. We learned too, that no equalization of power was possible if the weight of our own nation was absent from the scales (pp. 29-30).

The United States attention to its new active engagement foreign policy agenda (which included the costly military build-up to maintain a Cold War, and the costly requirements of ten years of fighting the conflict in Vietnam), and the focus of this agenda on political and ideological issues, diverted attention and resources from international commerce and from domestic economic development, which negatively impacted United States national competitiveness.

Part II: Factors Related to the Business Environment

2.1 Antitrust

Antitrust is a United States innovation, which "evolved from a peculiar American history" (Thurow, 1991, p. 97). Beginning in the 1890s, the United States government argued that, because large trusts and industry dominants were able to monopolize the supply of certain products and services, the restriction of competition allowed the dominant companies to limit the choice of products and services available to the consumer and, therefore, to charge unfairly high prices.

Some students of antitrust history argue that the regulators were less concerned with protecting the customer than destroying the political and economic power of those who, like J. P. Morgan, controlled trusts (Thurow, 1991; Brush, 1995).

A series of acts were passed by the United States Congress, beginning with the Sherman Act of 1890, that regulated certain business practices that were said to limit competition. These acts were focused on promoting competition within industry in the United States: they were not concerned with international non-competitive practices. The probable reasons for this domestic focus was that in 1890, foreign commerce represented only about 7 percent of the GNP of the United States (Kurian, 1994).

As part of occupational reforms, the United States assisted with the development and legislative passage of United States based antitrust laws in both Germany and Japan. Both Japan and Germany, however, have selectively interpreted and enforced these laws. The Japanese and German Governments have not found that mega-companies adversely affect national competitiveness, or that they hurt the consumer, but to the contrary. Because the competitive focus of Japan and Germany is external to their nation, and not internal or domestic, the governments of both countries have encouraged the growth of mega-companies in many industries, because they find them instrumental in competing effectively with foreign competitors, and thereby aiding national competitiveness.

The United States government continues to prohibit the collaborative between companies (on the grounds that these are non-competitive practices), to prevent mergers and acquisitions that would result in the creation of an industry dominant, and even to force the breakup of companies that have become successful (and, therefore, threaten competition). The United States government does now allow some collaboration between United States companies when they are involved in international business, but because these companies are conditioned to not collude and are in constant fear of being accused of acting in restraint of trade, they find it difficult (if not impossible) to behave one way domestically and another way internationally. This has resulted in United States companies being cautious when initiating strategies and transactions that would make them more competitive with foreign competitors (Competitiveness Issues, 1993; Brush, 1995).

United States companies are, therefore, at a disadvantage when competing with German and Japanese companies (as well as companies from other countries in the world), which operate under much less restrictive criteria. This competitive disadvantage has contributed to a decline in United States national competitiveness.

2.2 The Relationship Between Government and Industry

Adversity between United States Government and industry, and conflict between democratic principles which call for minimal government intervention and the Government's desire to control industry, have resulted in United States government and industry not having a collaborative relationship and also in a highly regulated environment, which often impedes the competitiveness of United States industry. According to Garten (1992), the United States "is a nation consumed by laws designed to ensure fair play, not to create any particular economic outcome" (p. 109).

The relationship between government and industry in both Germany and Japan is, to the contrary, non-adversarial — and the use of regulations is minimal. In both Germany and Japan there is a preference for government and industry to collaboratively work together to determine changes that must be made to meet national goals, including goals for economic growth, foreign trade, and employment. For example, collaboration between government and industry has been successful in developing industries, such as banking in Germany and steel and VLSI technology in Japan. Also, the efforts by the Japanese Government, working with specific industries to improve quality, have played an important role in the international success of key industries. The continuous dialogs that take place between industry and government in Japan and Germany, although not

without disagreement (because industry goals and national goals are not always congruent), has facilitated meeting national goals and has aided national competitiveness.

2.3 Financial Practices that Affect the Cost of Capital

The cost of capital is much higher in the United States than in either Japan or Germany. Dertouzos, et al. (1989), Garten (1992), Thurow (1992), and Competitiveness Issues (1993) have found three principal factors that have contributed to this phenomenon: (1) The high savings rates in Japan and Germany; (2) The high level of involvement of banks in industry in Japan and Germany, and (3) United States industry's reliance on capital markets for financing.

(1) Since 1980, savings rates in the United States have averaged about 5%. In Japan, over the same period, the average has been about 15%; in Germany it has been about 12%. Garten (1992) attributes the low savings rates in the United States to the practice of taxing the interest on savings, while allowing interest on loans to be tax deductible. The effect has been to encourage borrowing and to discourage savings. Japan and Germany, in general, use taxes as a means to encourage savings over borrowing. Savings rates correspond directly to the level of capital formation. The average capital

formation rate for the United States is 16.76%, for Japan is 30.75%, and for Germany is 22.7% (Statistical Abstract, 1995).

(2) The heavy involvement of banks in industry has kept the bankruptcy rates in Japan and Germany low. This has had the effect of reducing the risk inherent in making industry loans, which reduces interest rates.

(3) United States companies rely on capital markets rather than banks for financing. "Providers being less knowledgeable and less trustful of the companies. . . put a greater premium on funds" (Garten, 1992, p. 127).

In 1971, the average weighted cost of capital for the United States was 10%, (West) Germany 6.9% and Japan 7.3%. By 1981, the United States rate was 16.6%, (West) Germany 9.5% and Japan 9.2% (Statistical Abstract, 1995). The low cost of capital has aided the long term investment horizons common in Japanese and German companies. Conversely, the high cost of capital for United States industries has contributed to the short term investment horizon of American industries, which has contributed to the failure to replace capital equipment and to invest in state of the art process and product development technologies. (Dertouzos, et al. 1989; Thurow, 1992). All of these factors have contributed directly to a loss in United States national competitiveness.

2.4 The Availability of Natural Resources

Japan and Germany have historically been deficient in raw materials. This, by necessity, has motivated them to trade. This motivation increased in the post WWII period, because their currencies were not convertible and they no longer had colonies as sources for raw materials.

Germany addressed this problem by gaining access to needed raw materials by reestablishing relations with its former trading partners. This was facilitated by the Marshall Plan's objective of integrating Germany into western Europe. Because of residual animosities in the region, Japan was unable to re-establish relationships with its former Asian trading partners. Instead, Japan developed an understanding of product and logistical requirements for foreign markets, principally the United States, and through a focused collaborative effort, Japanese institutions developed an impressive inventory of skills and technologies for exporting marketable products.

The United States has always been rich in raw materials, and raw material intensive industries still account for the majority of industries where the United States has a dominant export position (Porter, 1990). The export of products based on raw materials, products where demand exceeds supply, do not require the same level of foreign market skill development as do competitive industrial

markets, where products and processes must be customized for successful foreign market penetration, such as those targeted by the Germans and Japanese (Dertouzos, et al. 1989; Porter, 1990).

Deficiencies in raw materials in Japan and Germany have led these nations to the development of superior knowledge in matters of international business. The United States abundance of raw materials has, on the other hand, led to inferior knowledge of foreign trade and other international business practices, which has contributed to the decline in the national competitiveness of the United States.

2.5 Domestic Market Size

Dertouzos, et al. (1989), Porter, (1990) and Thurow (1992) have found that because the size of the United States domestic market, which until the formation of the European Union in 1992 was the largest single market in the economically developed world (both in terms of numbers of consumers and the total sales of products and services), and because the United States consumers have one of the highest incomes per capita in the world, business executives in the United States historically lacked the need and, therefore, the motivation to develop international business skills. Also, the United States trade surplus, which surged immediately following WWII due to pent-up demand from foreign countries for United States goods that were needed for postwar reconstruction, and which

continued due to the popularity of products made in the United States, led to an institutionalized complacency in most United States companies relating to international trade (Garten, 1992).

Germany and Japan, because of the smaller size of their domestic markets, because they had historically been trading nations, and because of their limited domestic supply of raw materials, have not had to overcome any complacency relating to international trade. To the contrary, Germany and Japan have both instinctively seen the development of competitive international business skills as not only important, but as critical for their survival (Porter, 1990). This emphasis on trade was heightened following WWII, because the domestic purchasing power in both countries was extemely low due to the very low income per capita, because there was no pent-up demand for their products from other countries following WWII, and because their products were not popular following WWII. To the contrary, for decades after WWII many consumers, in what had been the Allied countries, refused to buy German or Japanese products, irrespective of price or quality (Christopher, 1984, Glouchevitch, 1992).

This combination of lack of motivation and skills in the area of international trade, on the part of United States companies, and the corresponding strong motivation and skills in the area of international trade, on the part of Germany and Japan, have contributed significantly to the decline in United States national

competitiveness.

2.6 Individualism v. Communitarianism

Germany and Japan are historically and culturally based on communitarian ideologies, whereas the United States is historically and culturally based on an ideology of individualism.[9]

German communitarian ideology is defined by Lodge and Vogel (1987) as nonstatist. According to Lodge & Vogel (1987) this implies that the role of the state is less important than that of other German institutions. Compared to Japan the strength of the German communitarian ideology is weak, although there have been periods of great strength during times of crisis, such as following WWII. Weaknesses in German communitarian ideology stem from two principal sources. First, the German nation was only proclaimed in 1871. It is a young nation with a mixed history of individual and communitarian ideological influences. Second, the German nonstatist form of communitarian ideology was borne out of repeated acts of betrayal from the German government as the leader of the German people (Lodge & Vogel, 1987).

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[9] Lodge and Vogel (1987) outline the extreme positions on values and beliefs in the ideology of individualism and the ideology of communitarianism as follows: Individualism is concerned with equality of opportunity; preference for contracts to define relationships; individual rights of private property; limited state intervention; competition to satisfy the desires of consumers; and specialization as the best way to achieve the maximum benefit of the whole. Communitarianism is concerned with consensus; both duties and rights of membership; the needs of the community; active planning by the state; and holism.

Japan is considered one of the strongest, most durable communitarian societies. Japan's nearly 1000 years of self-imposed isolation gave significant undistracted time for firmly implanting a communitarian ideology. Lodge and Vogel (1987) state that communitarian ideology forms the core of Japan's value and belief system, including: a sense of responsibility; respect for discipline and training; the importance of benefitting society; and loyalty and service to friends, family and above all to the state. Their obligations to the state are absolute. The Japanese believe that they are subjects of Japan, not individuals with inalienable rights. As a nation all citizens share in a sense of purpose for the collective mission of continually enhancing Japan for the betterment of the nation's future (Lodge and Vogel, 1987; Garten, 1992).

The impact of communitarian ideology on Japanese and German national competitiveness has been significant. The cooperative, collaborative relationship between government, industry and commerce, labor and other social institutions that exists in German and Japanese was a powerful force during post WWII economic reconstruction. It facilitated the development and implementation of industrial policies that were focused on rebuilding their nations (Garten, 1992; Thurow, 1992). Subsequent to reconstruction it has been instrumental to maintaining focus on national requirements for continued growth in the economy and national competitiveness. However, the strength and durability of the communitarian ideology in Japan, as evidenced by the unwavering commitment

among Japanese constituent institutions to collaborate for the benefit of their society, has had a significant positive impact on Japan's continued growth and development. By comparison, Germany's communitarian ideology is relatively weak, and has had less impact on Germany's national competitiveness.

Alexis de Tocqueville defined individualism as those traits that characterize Americans, and for the period covered by this paper, 1945 to 1982, an ideology of individualism was strong in the United States. There have been exceptions: there are many institutional practices in the United States that are communitarian, such as corporate structures and Government entitlement and social welfare programs; there have also been many times in the history of the United States where communitarian practices have prevailed, such as during the Great Depression, and during the two world wars; and there have been the appearance of communitarian policies and practices by the United States Government, including post WWII foreign policy initiatives such as the Marshall Plan, and the United States role in leading the coalition in the Cold War, (where it exhibited a degree of communitarian policies and practices vis-a-vis other national governments). Acheson (1979) stated that the success of foreign policy in the Cold War depended on a coalition of partners "dedicated to one overriding purpose--to be free and to be no one's satellite" (p. 233). But these are the exception rather than the rule.

The United States government has not exhibited these same communitarian tendencies to its domestic constituent institutions, such as industry and commerce, financial institutions, labor, education and even other government institutions focused on domestic policy (Dertouzos, et al. 1989; Garten, 1992). If these post-WWII United States foreign policy initiatives had been developed through collaboration with the United States constituent institutions, it is likely that these institutions would have monitored more closely the changing national competitiveness of the United States, Japan, and Germany, and responded with policies, strategies and practices that would have met the increasing levels of competition from these foreign sources.

Individualism-communitarian ideological differences have played a significant role in the rise in Japanese and German national competitiveness, and the decline in United States national competitiveness. Communitarian practices allowed Japan and Germany to execute focused programs of industrial and economic development, which were key to rebuilding their economies and to the ongoing developments in their national competitiveness. An excess of individualism ideology in the United States has contributed to the inability to coordinate the dissemination of information and collaborative communications among constituent institutions in the development of foreign policy, and has prevented the development and implementation of national economic and industrial development plans and policies (Acheson, 1969; Competitiveness

Issues, 1993), all of which seem to have played a role in the decline of United States national competitiveness.

Further Lodge & Vogel (1987) contend that the reason it took the United States nearly 11 years, from the posting of its first merchandise trade deficit in 1971 until the passage of the White House Conference on Productivity Act in 1982, to formally acknowledge and respond to a loss in national competitiveness was because the nation was in denial because "ideology was at stake" (p. 120).

Part III: Factors Related to Business and Managerial Practices

3.1 Research and Development

As a percent of GDP, the United States, Japan, and Germany spend a comparable amount on R&D. When defense R&D is deducted from United States R&D spending, then both Germany and Japan outspend the United States. In 1975, non-defense R&D spending in the United States was 1.61, as a percent of GDP; whereas for Japan it was 1.90, and for Germany it was 2.1. In 1980 these numbers had increased for all three countries: it was 1.76 for the United States, 2.00 for Japan, and 2.33 for Germany (Statistics Yearbook, 1995). But the increases notwithstanding, the United States still underspent both Japan

and Germany.

In Japan and Germany, industry has principal responsibility for R&D. R&D is usually performed by cooperating companies within an industry, and it is performed specifically to benefit industry applications. In the United States, on the other hand, the Federal Government has traditionally taken a leading role in sponsoring R&D activities and is the largest sponsor of basic research in the world. More significant than the amounts is the way in which these research resources are spent: in the United States the Government splits R&D expenditures between basic research and applied research; in Japan and Germany most R&D expenditures are for applied research (Dertouzos, et al. 1989; Garten, 1992).

Basic research (or pure research) is not intended to produce a usable result, let alone a commercially applicable product or solution. If basic research does produce a usable result, it is most likely to benefit the aerospace and defense industries, but even these outcomes are not likely to be readily usable for commercial applications. Applied research, as the name implies, is focused on producing a new or improved product or process. This last distinction is important, because it is estimated that 67% of applied research in the United States is product research (to develop a new or improved product), and only 33% is spent on process research (to develop improved methods for

manufacturing products). In Japan the ratios are the reverse: 33% of R&D is spent on product research, and 67% on process research. The ratios for Germany are about 50% on product research and 50% on process research (Dertouzos, et al. 1989, Thurow, 1992). Murray, Alan, Lehner and Urban (1993) argue that "What U.S. Scientists Discover, the Japanese Convert — Into Profit" (p. 14) and cite the development of the transistor and other high-tech products as examples; and along with Dertouzos, et al. (1989), and Thurow (1992) credit the emphasis on process R&D, rather than product R&D, as significant to the rise in the national competitiveness of Japan and Germany.

Most applied research (whether it is product or process) in the United States is carried out by the private sector, and most of this research is conducted as single company initiatives. The limited number of cooperative research projects is due partially to antitrust regulations (fear of an antitrust action limits the acceptability of collaborative projects), and partially to an ideology of individualism which has led to an aversion to, and suspicion of, collaborative projects with competitors (Lodge & Vogel, 1987; Competitiveness Issues, 1993). R&D spending by the private sector in the United States has continued to decline since the 1970s, whereas private sector R&D spending levels in both Japan and Germany have increased. A significant contributing factor to this decline in United States R&D spending has been the increasing occurrence of mergers and acquisitions. R&D expenditures by United States companies were found to be

reduced by an average of 8.3% following a merger (Ruckeyser, 1992).

The reduced emphasis that the United States government and industries have placed on R&D, their preference for basic research over applied research, and their preference for product research over process research, combine to impact their ability to innovate (in both product and process areas), and adversely impact United States national competitiveness.

3.2 Corporate Priorities, Governance, and Structure

There are four interrelated factors pertaining to corporate priorities, governance, and structure that have contributed to a decline in United States national competitiveness. These factors are: (1) Emphasis on maximizing shareholder wealth; (2) Short term investment horizon; (3) Conglomerate structures; and (4) Weaknesses in Corporate Structure and Governance. The absence of these practices in Japan and Germany, with the exception of the use of conglomerate structures, has led to a relative rise in national competitiveness in Japan and Germany.

Emphasis on maximizing shareholder wealth. The principal objective of a German corporation is perpetuity; in Japan the principal objective is to serve the interests of the company's employees and to serve the nation. These principle

objectives are both long term and driven by national goals and communitarian ideology. In the United States, however, the principal objective of a corporation is to maximize shareholder wealth, a goal that is short term and driven by an ideology of individualism rather than national objectives.

> . . . the unquestioned dominance of the goal of enriching the shareholders over other goals of most businesses has seriously undermined American competitiveness in the world economy. It has resulted in a failure to invest in innovation for long-term growth because short term returns would be inadequate. (Lodge & Vogel, 1987, p. 132).

Short term investor horizons. United States corporate reporting requirements and investor expectations have contributed to a focus on corporate actions and activities that directly influence short term performance measures. Investor expectations and reporting requirements, however, do not impact the investment horizon for corporations in Japan and Germany. This is because the focus in Japan and Germany is on long term capital appreciation. Further (and this is the most difficult thing for United States observers, economists, and analysts to believe), investor goals are congruent with the principal corporate objective of their respective nations: the goal of investors in the United States is to maximize their investment, the goal of investors in Germany is the growth and perpetuity of the company, and the goal for investors in Japan is that the company serves the

interests of its employees and the nation (Garten, 1992; Thurow, 1992; Competitiveness Issues, 1993).

The relationship between long term investing and national competitiveness is indicated by the positive correlation that is found between fixed investment and manufacturing productivity. Gross fixed investment as a percentage of GDP for the period 1950-1987 was 7.1% in the United States, 11.8% in Germany, and 17.6% in Japan. Increases in manufacturing productivity for the same period in the United States was 2.63%, in Germany 4.3%, and in Japan 7.96% (Porter, 1990).

Conglomerate structures. Currie & Skolnick (1984) reported that between 1950 and 1970 one in five of the largest companies in the United States was acquired. Most United States acquisitions were not related to either vertical or horizontal strategic expansion, resulting in a proliferation of the conglomerate form of corporate structure. Conglomerate structures were a popular strategy ostensibly to reduce risk exposure and reduce the adverse impact of cyclical industries, by achieving a portfolio spread in holdings and operations. But the conglomerate structure theory was developed by economists, financiers, and Wall Street, who overlooked the fact that the complexity of the conglomerate structure and its diversity of products and industry expertise makes it almost unmanageable (Thurow, 1992).

In the 1970s and 1980s the inability for conglomerates to perform became evident, which resulted in a rush by corporations to divest poorly performing business units. Corporations then changed their strategy to one of focus on their core areas of expertise (or what are now called core competencies). This propelled the use of mergers and acquisitions as a popular strategy to quickly shore up core areas of expertise, and to achieve economies of scale.

Weaknesses in United States corporate structure and governance. Weaknesses in corporate structure, resulting from numerous (often short term) shareholders, interlocking corporate boards, and overlapping corporate management and board memberships, has given way to governance practices that are ineffective at controlling weak management (Currie & Skolnick, 1984). It has become a popular practice in the United States to handle weak management, by replacing it through the use of a leveraged buy-out, a hostile takeover (that is, hostile to entrenched management, but not necessarily to the employees or to the shareholders), or a merger.

Recent analysis and reports have found the use of these practices in the United States to be destructive for the many, profitable for the few, and in sum expensive and inefficient. Stephen Roach, Head Economist at Morgan Stanley, noted that the evidence was mounting that the merger mania that began in the 1970s has hurt the competitive position of United States companies. Roach

argues that because corporate executives in the United States have focused on increasing efficiency, rather than increasing productivity, they are harming rather than improving United States national competitiveness. That is, the process of merging, and the consequent downsizing, means making do with less, whereas productivity should mean getting more out of more. Nobel Laureate Robert Solow agrees with Roach that productivity growth is "a better way to produce leading to a better way to produce. And downsizing is not that" (Roach, 1996, p.82).

The use of mergers and acquisitions as an instrument of strategy has had many negative effects that are often overshadowed by the effect on share price. These negative effects include adverse effects on employee motivation and moral; diminished technical innovation (which is directly affected by reduced R&D spending); and the wasteful redistribution of a company's investment priorities in an attempt to prevent takeovers, instead of investing in capital improvements (Adams and Brock, 1989; Ruckeyser, 1991).

In Japan and Germany, however, the focus is on long term objectives, shareholder stability, a focus on building and maintaining core competencies, and an aversion to mergers and acquisitions. These priorities have positively influenced national competitiveness for both Japan and Germany.

3.3 Education and Training

A study by the MIT Commission on Industrial Productivity found that "there seems to be a systematic underevaluation in this country (the United States) of how much difference it can make when people are well educated and when their skills are continuously developed and challenged" (Dertouzos, et al., 1989, p.81). According to Garten, however, "In Japan and Germany, there is an obsession with training and retraining — with upgrading human capital" (Garten 1992, p.130).

Education. Following WWII the United States education system, both K-12 and higher education, were considered the benchmarks for other nations (Thurow, 1992). However Wolff, Rutten & Bayers (1992) reported in a study conducted 45 years later by the World Rank Research Team that while other nations had been improving their education systems, the quality of education in the United States had been eroding: ten year old students in the United States placed eighth out of 15 countries in their knowledge of science, thirteen year old students placed thirteenth. The high school graduation rate in the US was reported to be 71%, as against 94% in Japan and 91% in Germany. Overall, the United States was found to have its biggest educational weakness in the areas of science at all levels of education, the areas of greatest strength for Japan and Germany.

Dertouzos, et al. (1989) found that these educational weaknesses were not limited to United States primary and secondary education systems. They found that a reduction in emphasis on science and engineering disciplines at the university level first occurred in 1970, with a corresponding rise in emphasis on business related disciplines and that the number of Americans holding Ph.D.'s in science and engineering has been reduced by 50% since the 1970s.

Porter has stated that "the single most important reason for the United States faltering in commercialization of technology is the eroding quality of human resources relative to other nations" (Porter, 1990, p. 520). He blames this situation on several factors including: United States universities are the best in the world, however, most are in need of an improvement in standards; United States high school graduates are significantly behind students in other advanced nations, particularly in the areas of science and math; training by United States companies lags far behind many advanced countries, in particular Japan and Germany; vocational and technical schools are weak and there is a void of serious apprenticeship training programs.

Training. Porter (1990), Garten (1992), and Thurow (1992) have found that United States employers do not places a high value on sponsoring ongoing employee training and development. They attributed this principally to an over-abundance of labor, and a lack of long term employee to employer commitment.

The post war baby boom and rising rates of immigration in the 1970s and 1980s provided the United States with a labor pool that exceeded the needs of industry. Because supply has exceeded demand, United States employers have largely failed to recognize the strategic value of human resources, and consequently have paid little attention to automating processes for ongoing employee development and training as elements of corporate strategy. Employers, however, lack incentives to provide ongoing employee training and development because of the absence of long term employee to employer commitment. The lack of long term employee to employer commitment in the United States can be attributed to: the increasing number of mergers and acquisitions that has resulted in numerous industrial downsizings by United States companies; and growing affluence, which has resulted in employees placing higher priority on leisure and family.

An educated and highly skilled workforce, such as that found in Japan and Germany directly and positively impacts productivity and quality of output, which contributes to rising levels of national competitiveness. Conversely the lack of emphasis given to education, ongoing training, and employee skill development by industry in the United States adversely impacts employee productivity and has contributed to a decline in United States national competitiveness.

3.4 The Relationship Between Labor and Management

The relationship between labor and management is considered to be adversarial in the United States, and non-adversarial in Japan and in Germany. Germany has facilitated an environment of cooperation between labor and management through a legal system that clearly defines the rights and duties of each party. In Japan the recognition of the strategic value of the human resource has provided the framework for an environment of cooperation between labor and management.

There are two factors that are at the heart of the adversity between labor and management in the United States : (1) A legal system that supports the disposability of the human resource; and (2) The ill-defined mission of United States labor unions.

Employment at Will. Employer commitment to employees varies by company, however, absent specific employment contractual provisions, United States employees are provided "employment at will." This means that a company is under no legal obligation to provide continuous employment. There are also no legal requirements upon companies to provide severance pay to employees being terminated, or to provide any other form of economic security. The United States Government has the ultimate responsibility for providing economic

security. This practice is very different from those found in Japan or Germany, where employment law or custom provides employment protections, and companies have primary responsibility for the economic security of their employees.

The differences among the United States, Germany, and Japan are evident in the following five employment practices identified by Currie & Skolnick (1984).

(1) Notice period for plant closures in Germany is 2-6 months by custom and one month by law; in Japan it is six months by custom; and in the United States there are no requirements relating to plant closure notification.

(2) Worker representation on Board of Directors in Germany is governed by the Co-Determination Law; in Japan there is no law, but 66% of boards have union members; and in the United States there are no legal or customary requirements.

(3) Paid sick leave in Germany is by law six weeks at full pay and four weeks at 75% of full pay; in Japan employees are provided with 80% of full pay indefinitely; and in the United States there are no legal requirements, however, it is customary for employees to receive five paid sick days per year.

(4) Paid maternity or paternity leave in Germany is six weeks before and 6 months after; in Japan customary practice is three months of paid leave; and in the United States there are no laws or customary practices.

(5) Employee rights on employer insolvency in Germany are that employees are given first priority and 68% of their wages for one year; in Japan it is customary for employees to receive full wages for two years, 80% of three months of pay is guaranteed by the government; and in the United States employees are not given any rights on employer insolvency.

Currie and Skolnick (1984) identify the absence of management recognition and commitment to their labor resources, and the reciprocal and not unexpected lack of commitment by employees to their employers, as a significant factor in the decline in United States national competitiveness.

United States labor unions. The United States labor unions have also contributed to a decline in national competitiveness. Initially, labor unions in the United States emerged to resolve the increasingly inequitable relationships that were developing between management and labor. Labor unions took on the mission of representing employees to management for the purposes of preservation and promotion of their safety, health, and welfare. Their mission did not include an exchange of commitment to a firm's competitiveness, and so the

grounds were in place for reversing the nature of the inequitable relationship (Garten, 1992). Even with increasing foreign competition, most significantly from Japan, United States labor unions have not modified their use of zero-sum (win-lose) negotiating strategies. These strategies have resulted in one-sided contracts that have been damaging to productivity and corporate and national competitiveness. (Dertouzos, et al. 1989) For example, union contracts which called for automatic wage escalations — that were not tied to productivity — were key contributors to the decline in United States industries such as steel and automobiles.

When, in the late 1970s, it was initially reported that United States productivity levels were not keeping pace with foreign competitors, United States labor unions responded by calling on the government for protection against imports and for retaliatory actions against foreign manufacturers, by verbally attacking foreign competition, and by promoting "Buy American" campaigns. "Faced with massive layoffs in many manufacturing industries, American labor launched a campaign against foreign competition. Demonstrating auto workers have smashed Japanese cars with sledgehammers and union leaders want legislation to restrict imports of foreign cars" (Rukeyser, 1991, p. 252).

The adversarial relationship between labor and management has hurt the ability of United States labor to meet the response of foreign competition. In Germany

and Japan, however, cooperative relationships between labor and management have facilitated the critical role that labor plays in meeting corporate and national goals, including the penetration of foreign markets, and increasing national competitiveness.

3.5 Supplier and Buyer Relationships

Unlike the strategic long term less-than-arms-length nature of supplier and buyer relationships in Japan and Germany, relationships with suppliers and buyers in the United States have traditionally been short term and arms-length. Normally, the principal criteria for selecting a supplier in the United States is price; and established suppliers who modify their prices often trigger reviews and supplier re-selection. The importance that private industry has placed on price in supplier selection has been supported by the federal government's lowest bidder policy (Strategies for Exploiting, 1986).

With price driving supplier selection, it is uncommon to find United States suppliers following the system used in both Germany and Japan, where suppliers are motivated to form clusters of operations with buyers, and where suppliers and buyers are able to work closely together and share information about future plans and strategies. Porter (1990) argues that "the whole concept of strengthening industry clusters is not truly understood in America" (p. 61).

United States ideology of individualism, United States Antitrust Laws, and the inherent distrustful nature of Americans are offered as partial explanations for their lack of understanding of the benefits that industry clustering can contribute to competitive advantage. Industry clusters of buyers and suppliers can develop close working relationships that: facilitate reducing the time to market for new products; develop technologically superior product and process designs; and implement more efficient inventory practices (such as JIT). The inability of United States suppliers and buyers to develop close relationships has had an adverse impact on United States national competitiveness (Porter, 1990).

3.6 Quality Management Practices

The Germans have a long documented history of producing quality products. Their seriousness toward quality takes various forms, for example, placing product quality before profitability, and passing legislation requiring the use of statistical methods of evaluation in the manufacturing process. However, the Germans have not embraced total quality management practices, preferring to focus on statistical quality control methods that aid producing technically superior quality products. This focus has helped many German companies to be successful penetrating niche markets throughout the world, where price is secondary to technical superiority and quality. Garten (1992) adds that "the niche strategy is also important in light of Germany's high wage rates and generous vacation schedules; the more unique a product is, the higher prices

can be charged to offset other costs" (p. 120).

The Japanese have little interest in niche markets, they are focused on growth in market share, in large markets. Increasing market share is the primary strategy by which a Japanese firm attains its principal objective of serving the interests of the employees and the nation (Dertouzos, et al. 1989). Quality management practices that have increased productivity, reduced defects, and driven down production costs have been a key component in Japanese strategies for gaining and maintaining strong market shares in key markets.

Japan was the first nation to equate the importance of quality management practices to increasing their national competitiveness. They first signified their commitment to quality management in 1951, with the establishment of a national quality award (the Deming Prize). Since then they have launched national programs as part of industrial policy to improve quality. Their strong commitment to quality practices has made them the global leader in both innovations and the evolution of quality management practices. These practices have made significant contributions to Japan's comparatively high rates of productivity;[10] and

[10] The average increase in labor productivity for the period 1950-1987 was 1.4% in the United States, 3.8% in Germany and 5.9% in Japan. The average increase in manufacturing productivity for the period 1950-1987 was 2.63% in the United States, 4.3% in Germany and 7.96% in Japan (Statistical Abstracts, 1995).

the production of high quality, value priced products that have successfully penetrated United States markets.

The United States owns the title for originating and developing the concepts of quality control and quality management. In 1926, statistical quality control (SQC) methods were first applied at the Hawthorne plant of Western Electric in an effort to reduce the percentage of defective products. Statistical quality control methods were enhanced by the pioneering work of G. Edwards Deming, J. Juran, and A. Feigenbaum in the 1950s. These new developments and enhancements resulted in quality control methods exceeding simple methods for minimizing defective products, to a more comprehensive practice of managing improvements in quality products and processes. However, United States industry had little motivation to adopt quality management practices, because they were busy filling post WWII orders from United States consumers who had traditionally been less concerned with quality than price, and from foreign customers who were more concerned with availability than quality (Juran, 1996).

The 1970s and 1980s have seen the rise and fall of quality management practices in the United States. The rises were precipitated by a need to become more competitive, falls were precipitated by underestimating the time and effort to achieve sustainable results. The failure of quality management practices to take hold in the United States has adversely affected many industries, and has

hurt national competitiveness. The demise of the United States steel industry, the loss of United States presence in the VCR industry, serious market share losses in the automobile industry, the automobile parts industry, the semiconductor industry, computers, copiers, small electrical appliances, and televisions have been attributed not to superior quality products, but rather to superior quality management practices by foreign competitors (with Japan heading the list of competitors). Superior quality management practices have enabled Japanese competitors to produce feature rich, quality products at lower cost than United States producers (Strategies for Exploiting, 1986; Hearing on the Privatization, 1987).

Japanese management practices and, most significantly, their quality management practices, have contributed to the rise in Japanese national competitiveness. So strong is the recognition that the Japanese received for the success of these practices that, beginning in the 1970s, the dominance of United States management practices was challenged successfully by the Japanese (Dertouzos, et al. 1989).

Conclusions

The paper studied the origins of the Malcolm Baldrige National Quality Award by examining the international factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982. The paper examined the influence of historical, social, cultural, and political factors on government policies and practices, financial practices, and business and managerial policies and practices that contributed to the rise in national competitiveness in Japan and Germany and to the decline in national competitiveness of the United States.

Paper One shows that:

(1) There were major differences in the historical, social, cultural, and political factors, and managerial practices that contributed to the economic development of Germany and Japan between 1945 and 1982, and that contributed to these countries becoming the 3rd and 2nd largest economies in the world, and the economic dominants of their respective geographical region.

(2) The implementation of the "components of national competitiveness," identified by the General Accounting Office of the United States, and by Porter, Thurow, and Dertouzos, et al. contributed to the rise in German and Japanese

national competitiveness between 1945 and 1982.

(3) Although Germany and Japan received similar treatment following WWII, and both produced high levels of economic growth, the rise in Japan's national competitiveness was the principal independent variable that contributed to the decline in the national competitiveness of the United States.

Paper One concludes that:

(1) The reason Japan focused on the United States market between 1945 and 1982, and became its principal commercial competitor, whereas Germany did not, was that Germany was reintegrated into Europe following WWII, whereas Japan was not reintegrated into Asia.

(2) The German and Japanese preoccupation with domestic economic recovery and economic development, rather than with foreign policy and ideological issues, contributed to the rise in the national competitiveness of those two countries.

(3) The preoccupation with the Cold War and defeating the Soviet Union, rather than achieving economic and commercial objectives, contributed to the decline in the national competitiveness of the United States.

(4) Although Porter, *et al*, do not include historical, social, cultural, and political factors, and managerial practices in their "components of national competitiveness," these factors contribute significantly to the development of national competitiveness.

(5) Product quality, although an important component of the rise in German and Japanese national competitiveness, is only one of many factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982.

Bibliography

Acheson, Dean (1969). Present at the Creation: My Years at the State Department. New York: W. W. Norton & Co. Inc.

Acheson, Dean (1979). This Vast External Realm. New York: W. W. Norton & Co. Inc.

Adams, W., Brock, J. W. (1989). Dangerous Pursuits: Mergers and Acquisitions in the Age of Wall Street. New York: Pantheon Books.

Amaya, Tadashi (1983). Human Resource Development in Industry. Tokyo, Japan: The Japan Institute of Labor.

Bennett, J. (Producer), Appulgiese, M. (Director) (1991). The Complete Churchill. (Film). (Available from A&E Home Video, 235 E. 45th St. NY, NY 10017.)

Bleeke, J. and Ernst, D. (1993). Collaborating to Compete: Using Strategic Alliances and Acquisitions in the Global Marketplace. New York: John Wiley.

Blinder, A.S. (1992, January). Trading with Japan: Why the United States Loses -Even on a Level Playing Field. Business Economics, 25-29.

Bowring, R. & Kornicki, P. (Eds.). (1993) Japan. Cambridge University Press: Cambridge, England.

Brush, Kathy (1995). Antitrust Anarchy: A Comparative Analysis of the Responses to Non-Competitive Business Practices by the United States, the United Kingdom and Japan. Ft. Lauderdale, FL: Nova University.

Brush, Kathy (1994). A Guide to Export. San Jose, CA: Lamoreux Online Marketing.

Capra, Frank (Director) (1942). Prelude to War. (Film). (Available from Viking Video Classics, P.O. Box 0069, Burbank, CA 91505)

Caves, Richard (1976). Industrial Organization in Japan. Washington, D.C.: The Brookings Institute.

Charkham, Jonathan (1994). Keeping Good Company: A Study of CorporateGovernance in Five Countries. Oxford, England: Clarendon Press.

Christopher, R. C. (1984). The Japanese Mind. New York: Fawcett Columbine.

Cohen, Theodore (1987). Remaking Japan. The American Occupation as New Deal. New York: The Free Press.

Competitiveness Issues: The Business Environment in the United States, Japan and Germany. General Accounting Office, GAO/GGD 93-124. Washington D.C.: 1993.

Conference Board (1993). German Perspectives on Total Quality. (Report Number 1042).

Cox, James, (2/20/97). How Rebels Would Reshape Japan. USA Today,(p. 3B).

Currie, E. & Skolnick, J. H. (1984). America's Problems: Social Issues and Public Policy. Boston, MA: Little, Brown & Co,

Deming Prize at 40. Union of Japanese Scientists and Engineers. Tokyo, Japan: (1990).

Dertouzos, Lester, Solow, & MIT Commission on Industrial Productivity (1989). Made in America. Cambridge, MA: The MIT Press.

Dower, J. W. (1993). Japan in War and Peace. New York: W. W. Norton & Company.

Dower, J. W. The Useful War. In Gluck, C. & Graubaud S. R. (Eds.) (1992). Showa: The Japan of Hirohito (pp. 49-70). New York: W. W. Norton & Company.

Eistenstadt, G. (1992, March 30). Lip Services: Japanese Antitrust Regulation. Forbes, (p. 73).

Fulbrook, Mary (1990). A Concise History of German History. Cambridge University Press: Cambridge, England.

Furstenberg, F. (1974). Why the Japanese Have Been so Successful. Ondon, England: Leviathan House.

Garten, J. E. (1992). A Cold Peace: America, Japan and Germany and the Struggle for Supremacy. New York: 20th Century Fund.

Garvin, D. A. (1988). Managing Quality: The Strategic and Competitive Edge. New York: The Free Press.

Gay, Peter (1968). Weimar Culture: The Outsider as Insider. London, England:Sicker & Warburg.

German National Historical Museum (1997). The Last 1000 Years of German History. (Cassette recording). Berlin, Germany: German National Historical Museum.

German Technik (Technology) Museum (1997). The History of Technology in Germany. (Cassette recording). Berlin, Germany: German Technik Museum.

Glochevitch, P. (1992). Juggernaut: The German Way of Business. New York: Simon & Schuster.

Glochevitch, P. (1994). Juggernaut: The Keys to German Business Success. New York: Touchstone.

H. Rpt. No. 100-96 on H.R. 812, "Malcolm Baldrige National Quality Improvement Act of 1987," May 18, 1987.

Hall, E. T., Hall, M. R. (1987). Hidden Differences: Doing Business with the Japanese. New York: Anchor Press.

Hane, Mikiso (1982). Peasants, Rebels & Outcasts. New York: Pantheon.

Hearing on the Privatization of the National Technical Information Service, and H.R. 812, The National Quality Improvement Award Act of 1987. 100th Cong., 1st Sess. (1987). (Testimony of John Hudiberg, William Eggleston, Dr. Frank Gryna.)

Hofstede, G. (1980). Culture's Consequences: International Differences in Work Related Values. Beverly Hills, CA: Sage Publications.

Imai, Masaki (1986). Kaizen: The Key to Japan's Competitive Success. New York: McGraw-Hill Publishing.

Info-bank, (1997). The History of the German Reichstag. Berlin, Germany: Author.

Inoue, Munenichi (1985). Competition and Cooperation Among Japanese Corporations. In Thurow, L. E. (Ed.), The Management Challenge - Japanese Views. (pp. 139-159). Cambridge, MA: The MIT Press.

Ishikawa, Kaoru (1985). What is Total Quality Control? The Japanese Way. Englewood Cliffs, NJ: Prentice Hall.

Jacobson, G. & Hillkirk, J. (1986). Xerox: American Samurai. New York: MacMillan.

JETRO Business Information Series, (1992). Japanese Corporate Decision Making. Tokyo: JETRO.

JETRO Marketing Series, (1993). The Japanese Consumer. Tokyo: JETRO.

JETRO Monitor (June, 1992). Keiretsu, Rational System Undergoing Change. Tokyo: JETRO.

Johnson, Chalmers (1982). The Growth of Industrial Policy, 1952-1972. New York: W. W. Norton & Company.

Johnson, Chalmers (1995). Japan: Who Governs. New York: W. W. Norton & Company.

Juran, J. M. & Gryna, F. M. (Eds.) (1988). Juran Quality Control Handbook. (4th Ed.). New York: McGraw-Hill.

Juran, J. M. (Ed.) (1996). A History of Managing for Quality. New York: McGraw-Hill.

Kawai, Kazuo (1960). Japan's American Interlude. Chicago, IL: The University of Chicago Press.

Kitchen, M. (1996). The Illustrated History of Germany. Cambridge, England: Cambridge University Press.

Kondo, Yoshio. Quality in Japan. In Juran, J. M. (Ed.) (1996). A History of Managing for Quality (35F.1 - 35F.29). New York: McGraw-Hill.

Kondo, Yoshio (1993). Quality Education in Japan. Total Quality Management, 4. (2), 115-125.

Kovacic, William (1992, April). The Influence of Economics on Antitrust Law. Economic Inquiry, pp. 294-307.

Kurian, G. T. (1994). Datapedia of the United States 1790-2000: American Year by Year. Latham, MD: Bernan Press.

Lawrence, Peter (1980). Managers and Management in West Germany. London: Croom Helm.

Lodge, G. & Vogel, E. (Eds.). (1987). Ideology and National Competitiveness:An Analysis of Nine Countries. Cambridge, MA: Harvard Business School Press.

Malcolm Baldrige National Quality Improvement Act, Public Law 100-107 (H.R. 812), (August 20, 1987).

Mayer, H.C. (1969). German Recovery and The Marshall Plan 1948-1952. Bonn, Germany: Edition Atlantic Forum.

McNamara, R. S. (1989). Out of the Cold. New York: Simon and Schuster.

Mee, C. L. (1984). The Marshall Plan: The Launching of the Pax Americana. New York: Simon and Schuster.

Millar, Jean (1979). British Management vs. German Management. London, England: Saxon House.

Monopolkomission (1978). *Hauptgutachen II. Fortschreitende Konzentration bei Grossunternehmen.*

Morton, S. W. (1970). Japan: Its History and Culture. New York: Thomas Y. Crowell Co.

Murray, Alan, Lehner & Urban (February 12, 1993). "What U.S. Scientists Discover, the Japanese Convert -- Into Profit," The Wall Street Journal, p.14.

Nevis. E.C. (1983, Spring). Cultural Assumptions and Productivity: The United States and China. Sloan Management Review, 24, (3) 17-29.

Ohmae, K. (1982). The Mind of the Strategist: The Art of Japanese Business. New York: McGraw-Hill.

Porter, M. E. & Fuller, M. B. (1985). Coalitions and Global Strategy. In Michael E. Porter (Ed.), Competition in Global Industries, (pp. 315-343). Boston, MA: Harvard Business School Press.

Porter, M. E. (1990). The Competitive Advantage of Nations. New York: The Free Press.

Porter, M. E. (1980). Competitive Strategy: Techniques for Analyzing Industries and Competitions. New York: The Free Press.

Price, H. B. (1955). The Marshall Plan & Its Meaning. Ithaca, NY: Cornell University Press.

Prowse, Stephen (1994), Corporate Governance: An international Perspective: a Survey of Corporate Control Mechanisms in the United States, the United Kingdom, Japan and Germany. Basle, Switzerland: Bank for International Settlements.

Randlesome, C. (1994). The Business Culture in Germany. Oxford, England: Butterworth Heinemann.

Rapoport, C. (1991, July 15). Why Japan Keeps on Winning. Fortune, 76-85.

Roach, Stephen (November-December 1996). The Hollow Ring of the Productivity Revival. Harvard Business Review, pp 81-89.

Royama, Shoichi. Money and the Japanese. In Gluck, C. & Graubaud S. R. (Eds.) (1992). Showa: The Japan of Hirohito (pp. 177-190). New York: W. W. Norton & Company.

Ruckeyser, Louis (Ed.) (1991). Louis Ruckeyser's Business Almanac. New York: Simon and Schuster.

S. Rpt. No. 100-143 on H.R. 812, "Malcolm Baldrige National Quality Improvement Act of 1987," August 4, 1987.

Schaller, Michael (1985). The American Occupation of Japan: The Origins of TheCold War. New York: Oxford University Press.

Schaller, Michael (1989). Douglas MacArthur: The Far Eastern General. New York: Oxford University Press.

Schonberger, H. B. (1989). Aftermath of War: Americans and the Remaking of Japan, 1945-1952. Kent, Ohio: Kent State University Press.

Severly M., Fishbein S.L., & Bourne R. B. (1971). Great Religions of the World. Washington, D. C: National Geographic Book Service.

Silberschmidt, M. (1972). The United States and Europe: Rivals and Partners. New York: Harcourt Brace Javanovich.

Statistical Abstract of the United States 1879-1995 (1995). Washington, D.C.: U.S. Department of Commerce.

Strategies for Exploiting American Inventiveness in the World Marketplace. 99th Cong., 2d Sess. (1986) (Testimony of John Hudiberg, Dr. Joseph Juran, John Hansel, and Dr. Myron Tribus).

Takeuchi, Hiroshi (1985). Motivation and Productivity. In Thurow, L. E. (Ed.), The Management Challenge - Japanese Views, (pp. 18-30). Cambridge, MA: The MIT Press.

The Malcolm Baldrige National Quality Award. 102nd Cong., 2nd Sess. 97.

The Malcolm Baldrige Quality Award: Has it Made a Difference? 103rd Cong., 1st Sess. 9.

The Malcolm Baldrige National Quality Award Program: An Oversight Review from its Inception. 104th Cong., 1st Sess. 21.

Third Report on Promoting Long-Term Prosperity from the Competitiveness Policy Council. 103rd Cong., 2nd Sess. 139.

Thurow, Lester (1992). Head to Head: The Coming Economic Battle among Japan, Europe and America. New York: Morrow.

Thurow, Lester (1991, August). Let's Learn from the Japanese. Fortune, 97-98.

Tsuruta, Toshima (1985). Japan's Industrial Policy. In Thurow, L. E. (Ed.), The Management Challenge - Japanese Views. (pp. 160-190). Cambridge, MA: The MIT Press.

van Wolferen, Karel (1989). Enigma of Japanese Power. New York: Alfred A. Knopf.

Wolff, Rutten & Bayers (1992). Where We Stand: Can America Make it in the Global Race for Wealth, Health, and Happiness? New York: Bantam Books.

Weinshall, T. D. (1993). Societal Culture and Management. Berlin, Germany: deGruyer.

Zink, Harold (1957). The United States in Germany, 1944-1955. Princeton, NJ: D. Van Nostrand Company.

The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982 - 1987)

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THE UNION INSTITUTE

The Origins, Evolution and Outcomes of the Malcolm Baldrige National Quality Award

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Project Demonstrating Excellence (Dissertation)

Abstract

The Origins, Evolution, and Outcomes of the Malcolm Baldrige National Quality Award

Kathleen Brush's Project Demonstrating Excellence (PDE) is a unified series of three articles, which examine the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award (MBNQA).

Abstract of Paper 1

"International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany and Japan from 1945 to 1982."

This paper is an interdisciplinary multi-country analysis of the factors that contributed to the rise in national competitiveness of Germany and Japan and the decline in the national competitiveness of the United States from 1945 to 1982, which led, in 1982, to the United States posting its first trade deficit since the Second World War (WWII). The paper analyzes historical, social, and cultural factors in Germany and Japan that resulted in government, financial

managerial, and educational policies and practices; which influenced national competitiveness in Germany, Japan, and the United States.

Abstract of Paper 2

"The Malcolm Baldrige National Quality Improvement Act: An Examination and Analysis of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987)."

This paper examines the response by the Congress to the United States posting its first trade deficit since WWII (in 1982). It details the legislative origins of the idea for a national quality award, the Congressional hearings, and other events that led to the shift in emphasis from productivity improvement to quality improvement, and to the passage of The Malcolm Baldrige National Quality Improvement Act (MBNQIA).

Abstract of Paper 3

"The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation (1987-1996)."

This paper presents an analysis of the performance of the MBNQA using two sets of primary data: (1) the MBNQIA legislation and related congressional testimony; and (2) the original documents that were provided by the winning companies, which include documents that the legislation requires each winning company to produce and make available to other United States organizations.

This paper is premised on the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation (as informed by the congressional testimony) with the observable results of the implementation of the legislation. Consistent with this premise, this paper analyzes the performance of the MBNQA by comparing the objectives and criteria contained in the MBNQIA of 1987, with the measures taken by the twenty eight companies that won the Award, from 1988 through 1996.

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The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation. (1982 - 1987)

Kathleen E. Brush

INTRODUCTION

This paper is the second in a unified series of three articles that examine the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award. The three articles are being researched, written, and presented at scholarly conferences in partial fulfillment of the author's Ph.D. program at The Union Institute.

The first article in the series is "International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany, and Japan from 1945 to 1982." [1] The paper looks at

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[1] Paper 1 was presented at the South Western Regional Conference of the International Studies Association in New Orleans, on March 23, 1997.

The paper looks at the origins of the Malcolm Baldrige National Quality Award (MBNQA) by examining the international factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982. This decline in United States national competitiveness led, in 1982, to the United States posting its first trade deficit since the Second World War (WWII), which initiated a chain of events that led to the passage of the Malcolm Baldrige National Quality Improvement Act in 1987.

The second article in the series is "The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation. (1982-1987)." [2] The paper looks at the evolution of the MBNQA by examining: the response by the Congress to the United States posting its first trade deficit since WWII (in 1982), to the United States becoming a net debtor nation, and to Japan becoming the world's largest creditor nation (both in 1985); the legislative origins of the idea for a national quality award, the Congressional hearings on the development of solutions to the United States trade deficit, and other events that led to the introduction of the National Quality Improvement Act of 1986; the introduction of the 1987 version of the Act, the related Congressional hearings, the shift in emphasis from productivity improvement to quality improvement; the

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[2] Paper 2 was presented at the 1997 annual conference of the Business and Economics Society International, in Athens, Greece, on July 19, 1997.

amendments to the 1987 Act; and, on August 20, 1987, the passage of The Malcolm Baldrige National Quality Improvement Act.

The third article in the series is "The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation. (1988-1996)." [3] The paper looks at the outcomes of the MBNQA by presenting an analysis of the performance of the Award using two sets of primary data: (1) the Malcolm Baldrige National Quality Improvement Act legislation and related congressional testimony; and (2) the original documents that were provided by the winning companies, which include documents that the legislation requires each winning company to produce and make available to other United States organizations — and other documents that describe the measures taken by the company, which resulted in it winning the Award. The paper is premised on the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation (as informed by the congressional testimony) with the observable results of the implementation of the legislation.

The purpose of this paper, Paper 2, is to study the evolution of the MBNQA by presenting an examination and analysis of the immediate antecedents to The

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[3] Paper 3 was presented at the annual meeting of the American Association of Behavioral and Social Sciences, to be held in Las Vegas, on January 14, 1998.

Malcolm Baldrige National Quality Improvement Act of 1987. The research methods used in the study are historical and descriptive. The indirect independent variables of the study are the decline in the national competitiveness of the United States, the rise in the national competitiveness of Japan, the United States trade deficit, the United States becoming a net debtor nation, and Japan becoming the world's largest creditor nation. The direct independent variables of the study are the Congressional hearings, Acts of Congress, and other events that led to the passage of The Malcolm Baldrige National Quality Improvement Act of 1987. The dependent variable is the passage of the Act.

The period of the study begins in 1982, when the United States posted its first trade deficit since the Second World War (WWII). The paper ends in 1987, with the passage of The Malcolm Baldrige National Quality Improvement Act.

The paper is presented in two sections. Section 1: The Prolegomenon, covers the period 1982 to 1985, and discusses The White House Conference on Productivity Act of 1982, the White House Conference on Productivity (which was held in 1983), and the Conference Report to the President (which was released in 1984).

Section 2: The Congressional Hearings and the Passage of the Legislation, covers the period 1985 to 1987. It discusses the response by the Congress to the United States becoming a net debtor nation, and to Japan becoming the world's largest creditor nation (in 1985); the legislative origins of the idea for a national quality award, the Congressional hearings on the development of solutions to the United States trade deficit, and other events that led to the introduction of the National Quality Improvement Act of 1986; the introduction of the 1987 version of the Act, the related Congressional hearings, the shift in emphasis from productivity improvement to quality improvement; the amendments to the 1987 Act, and its passage by the House of Representatives; the lack of a Senate companion Bill, the death of Secretary of Commerce Baldridge, and the introduction and passage of the Senate companion Bill; and, on August 20, 1987, the passage of The Malcolm Baldrige National Quality Improvement Act.

Literature Review

The literature review for this paper included: a search of book and journal collections at the Jackson, Green, and Meyer Libraries at Stanford University; a search of collections in the Santa Clara County Library System; a search of book and journal collections at the Orradre Library at Santa Clara University; a search

of article abstracts from professional journals available through the comprehensive online databases of Infotrac and ABI Inform; a search of Dissertation Abstracts from a current CD ROM; a search of the Books in Print database; and searches on the World Wide Web using a variety of search engines, including a Web search engine specifically for Government Publications. I also used the Federal Depository libraries at Stanford University, Santa Clara University, the New Hampshire State Congressional Library, and the Library of Congress in Washington, D.C.; and obtained government documents directly from the Government Publications Office and the Department of Commerce.

The literature search found no reference that traces the evolution of the Malcolm Baldrige National Quality Improvement Act. There is a paucity of awareness of the specific provisions of the legislation, let alone its origins. There are some works that include either brief quotes from the Act, or quotes from quality management practitioners and authors who participated in the legislative hearings and, or debates. The more substantial of these brief references are contained in the works of: C. Hart & C. Bogan (1992), M. Steeples (1992), and N. DeCarlo and W. Sterrett, (1990). None of these references examines the immediate antecedents, the intent and objectives contained in the legislation, or how the focus of the legislation changed as it progressed.

Additional information was also obtained through the exchange of e-mail with staff members of the National Institute of Technology (NIST), the organization that manages the Malcolm Baldrige National Quality Award program, and through a interview at NIST's offices in Gaithersburg, Maryland, with NIST's Director, Dr. Harry Hertz, and its Deputy Director, Barry Diamondstone.

Principal Documents

The research process identified fourteen Government Documents for the 1982-1987 period that provide a framework for describing the chain of events that led to the passage of the Malcolm Baldrige National Quality Improvement Act. These principal documents are listed below in chronological order.

They have been given Government Document numbers, which have been used in the in-text citations as "Gov. Doc." numbers.

1. White House Conference on Productivity Act. (October 25, 1982)

2. A Report to the President from the NPAC. "Restoring Productivity Growth in America. A Challenge for the 1980s." (December, 1983)

3. The Report on The White House Conference on Productivity, titled "Productivity Growth — A Better Life for America: A Report to the President of the United States." (The Conference took place in September of 1983, the Report was issued in April 1984.)

4. Congressional Resolution to promote a national campaign with a theme of "Quality First." (1984)

5. Presidential proclamation setting aside October as National Quality Month. (1984)

6. The Productivity Improvement Program. A Message from the President. " A Program to Improve Productivity within the Federal Government." (July 31, 1985)

7. Strategies for Exploiting American Inventiveness in the World Market-place. House Committee on Science, Research and Technology. (June 24-26, 1986)

8. Bill HR 5321. "National Quality Improvement Award Act of 1986." (August 1, 1986)

9. Hearing on the National Technical Information Service, and HR 812, The National Quaiity Improvement Award Act of 1987. (March 4, 1987)

10. Report on the National Quality Improvement Act of 1987, H.R. 812. From the House Committee on Science, Space, and Technology. (May 18, 1987)

11. Hearings from the House on H.R. 812. (June 8, 1987)

12. Senate Companion bill S. 1251 was introduced to the Senate. (July 28, 1987)

13. MBNQIA of 1987. (H.R. 812). Report of the Senate Committee on Commerce, Science and Transportation. (August 4, 1987)

14. "Malcolm Baldrige National Quality Improvement Act of 1987", becomes Public Law 100-107. (August 20, 1987)

SECTION ONE:

THE PROLEGOMENON (1982-1985)

The First Wake-up Call

In 1982 the United States reported its first trade deficit since the Second World War. The previous paper in this series "International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in the United States, Germany, and Japan from 1945 to 1982," concluded, *inter alia*, that the 1982 trade deficit was due to a decline in the national competitiveness of the United States. This decline was attributed to historical, social, cultural, and political factors, and certain managerial practices, such as organizational behavior, that contributed to the economic development of Germany and Japan since WWII.

Paper 1 also concluded that:

(1) Although Germany and Japan received similar treatment following WWII, and both produced high levels of economic growth, the rise in Japan's national competitiveness was the principal independent variable that contributed to the

decline in the national competitiveness of the United States.

(2) The reason Japan focused on the United States market between 1945 and 1982, and became its principal commercial competitor, whereas Germany did not, was that Germany was reintegrated into Europe following WWII, whereas Japan was not reintegrated into Asia.

(3) The German and Japanese preoccupation with domestic economic recovery and economic development, rather than with foreign policy and ideological issues, contributed to the rise in the national competitiveness of those two countries.

(4) The preoccupation with the Cold War and defeating the Soviet Union, rather than achieving economic and commercial objectives, contributed to the decline in the national competitiveness of the United States.

(5) Product quality, although an important component of the rise in German and Japanese national competitiveness, was only one of many factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982.

The White House Conference on Productivity Act

(October, 1982)

Congress responded to the 1982 trade deficit by passing The White House Conference on Productivity Act, on October 25, 1982. The Act called for a joint private and public sector effort to address problems with the decline in the United States productivity growth rate.[4]

The Act focused on solutions that would improve the productivity growth rate, rather than on reversing the decline in national competitiveness, *per se*. The focus on reversing the decline in the productivity growth rate is supported in two sections of the Act : (1) the purpose, and (2) the options.

(1) The purpose of the Act

The purpose of the Act was to provide for a conference where productivity experts from local, state and federal governments, labor, business, academia,

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[4] The first high level Government initiative to seriously consider the issue of the United States declining productivity growth rate was taken on November 10, 1981, when President Reagan issued an Executive Order creating the National Productivity Advisory Committee (NPAC). The purpose of NPAC was to advise the President and the Secretary of the Treasury on "what further actions the government might take to achieve higher levels of productivity in the United States" (NPAC, 1983, p. 3). The scope of this Executive Order was limited to public sector, short term initiatives.

and associations would meet to "develop recommendations to stimulate the Nation's productivity improvement rate" (Gov. Doc. 1, p. 88).

The purpose was defended by three of the Act's Findings: (1) That United States productivity growth rates were less than those of other foreign nations; (2) That declining productivity negatively impacted the standard of living in the United States; and (3) That policies and practices used in other countries could be implemented in the United States to achieve productivity improvement.

(2) The Options

The Act called on the Conference to consider options for improving the Nation's productivity growth rate in eleven areas:

1. Reorganizing the Federal Government to best promote productivity improvement in the private and public sectors;
2. Implementing awareness campaigns that would promote the use of productivity improvement techniques by business, labor organizations, and government;
3. Improving training and skill levels of United States labor;
4. Increasing Government efforts to publicize foreign technological developments;

5. Encouraging government agencies to share with industry new discoveries that improve productivity;
6. Revising tax laws to encourage improvements in productivity;
7. Reviewing the relationship between antitrust laws and productivity;
8. Reviewing the relationship between patent laws and productivity;
9. Improving data gathered on productivity by Government statistical collection centers;
10. Revising government civil service laws to improve worker productivity; and
11. Establishing annual Presidential awards to recognize businesses that accomplish outstanding improvements in productivity.

The White House Conference on Productivity (September, 1983)

Preparatory conferences were held between June and August 1983. The Conference, which was attended by 1000 experts on productivity experts from Government, academia, business, and labor took place from September 21 to September 23, 1983. The Report was published seven months later, in April, 1984.

The Report on The White House Conference on Productivity (April, 1984)

The Report on the Conference, titled "Productivity Growth — A Better Life for America: A Report to the President of the United States," listed hundreds of recommendations to improve the productivity growth rate. There were several recommendations that related to quality. One of these was to "create a National Medal for Productivity and Quality achievement to recognize specific actions by organizations to improve productivity" (Gov. Doc. 3, p. 7). There is a complete absence, however, of any mention to problems with the quality of United States products or services, process quality, management quality, or the quality of labor; and there is no reference to quality in the section of the report on the most often repeated explanations for the decline in productivity. That is, the Report did not indicate in any way that problems with the quality of United States products and services was causally related to the decline in the United States productivity growth rate (Gov. Doc. 3).

The Government did not follow up on the recommendations made at the White House Conference on Productivity (including the recommendation for a National Medal for Productivity and Quality Achievement), because the United States productivity growth rate increased in 1984. The focus of the White House Conference on Productivity had been to reverse the decline in the United States productivity growth rate, on the assumption that there was a direct correlation

between productivity growth rate and national competitiveness, and on the assumption that reversing the decline in the productivity growth rate would reverse the growth in the trade deficit. Based on these assumptions, the 1984 increase in the United States productivity growth rate meant that there was no longer a need to implement the solutions that had been advanced at the Conference, even though the trade deficit continued to grow.

Government Initiatives Promoting Quality and Productivity (1984 and 1985)

The sum total of actions taken by the United States government, in the two years following the Report, were three campaigns: two related to quality, and one related to productivity. In 1984, the proponents of improving quality (as a means to improve national competitiveness) achieved a minor victory: the United States Congress adopted a resolution to promote a national campaign with a theme of "Quality First," and President Reagan made a Presidential Proclamation designating October as National Quality Month.[5]

In 1985, although the Government's interest in implementing measures to improve the productivity growth rate had cooled, it was still active, and the

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[5] "The National Quality Month campaign was designed to convince business leaders that "Quality First was essential in the United States to recapture pre-eminence in products and services" (www.asqc.org\about\history.html).

proponents of productivity improvement (as a means to improve national competitiveness) also achieved a minor victory. On July 31, 1985, President Reagan issued a Presidential message that was targeted toward improving productivity within the Federal Government.

SECTION TWO:

CONGRESSIONAL HEARINGS AND THE PASSAGE OF THE LEGISLATION (1985-1987)

The Second Wake-up Call

A resurgence of United States Government interest in issues related to discussions on national competitiveness, including interest in a national quality award, was triggered by the 1985 trade statistics. These statistics indicated that in 1985 the United States had continued to show an increase in its trade deficit, Japan had become the world's largest creditor nation, and the United States had become a net debtor (Gov. Doc. 8).

Because the of the failure of its recent efforts to address the trade deficit (due to its focus on improving the United States productivity growth rate), Congress had become more receptive to alternative problem diagnoses and solutions. Rather than calling for another White House Conference, the Congress turned to the House of Representatives Committee for Science and Technology.

The Origins of the Idea for a National Quality Award (1986)

The House of Representatives Committee for Science and Technology was tasked to diagnose the causes of, and develop alternative solutions to, the trade deficit. The Chairman of the Committee, Congressman Don Fuqua from Florida, scheduled hearings under the subject heading *Strategies for Exploiting American Inventiveness.*

Around this time, one of Congressman Fuqua's constituents, the CEO of Florida Power and Light (FP&L), John Hudiberg, contacted Congressman Fuqua and introduced him to the idea of legislating the creation of a national quality award. Hudiberg told Congressman Fuqua that FP&L was an applicant for Japan's national quality award, the Deming Prize,[6] and detailed the enormous benefits that FP&L was deriving from pursuing this goal. Fuqua agreed to allow time at the Committee's hearings for testimony on the merits of a national quality award (Hart, 1992).

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[6] The Deming Prize for Overseas Companies (that is, for non-Japanese companies) had been approved by the Deming Prize Committee in 1984. It was Hudiberg's goal to be the first overseas company to be awarded the prize.

The 1986 Hearings on National Competitiveness (June, 1986)

On June 24-26, 1986, The House of Representatives Subcommittee on Science, Research, and Technology (chaired by Congressman Doug Walgren from Pennsylvania) heard testimony that addressed the causes of, and alternative solutions to, the United States decline in national competitiveness (Gov. Doc. 7).

The hearings covered a series of topics related to reversing the decline of U.S. national competitiveness. These included, *inter alia*: reforming the tax code, foreign trade policy, government subsidies, education reform, the need for collaboration among government, industry and education, the use of quality management practices — and the creation of a national quality award (Gov. Doc. 7).

Non-quality related testimony

During the three days of testimony to The House of Representatives Subcommittee on Science, Research and Technology, thirteen speakers offered solutions as to how to reverse the decline in United States national competitiveness. With the exception of the four speakers discussed in the following section (Tribus, Hudiberg, Juran, and Hansel), none of the speakers

who gave testimony to the Subcommittee suggested that problems with United States national competitiveness were related to the quality of products and services, or that a national quality improvement program or award could help to reverse the decline in United States national competitiveness.

The non-quality related testimony accounted for approximately seventy five percent of the volume of testimony that was presented. An indication of the tone and content of this non-quality related testimony is contained in the Testimony by (1) Dr. George C. Lodge; (2) The report and testimony provided by the House of Representative's Steering Committee of The Task Force on High Technology Initiatives; and (3) the Report by the International Economic Affairs Department (Gov. Doc. 7).

(1) Testimony by Dr. George C. Lodge

This he attributed to the "reluctance of our country's leaders to perceive or admit" (Gov. Doc. 7, p. 259) that the nation's competitiveness has been declining for many years. Lodge recommended the following measures be adopted to improve the national competitiveness of the United States:

1. Revise antitrust laws to allow U.S. companies to benefit from the advantage of size.

2. Work to develop a collaborative relationship between Government and industry.
3. Develop policies and practices that result in lower costs such as, "careful management."
4. Lower the wages paid to management.
5. Implement policies that would enable lower costs for debt.
6. Require reciprocity with foreign nations on market access.
7. Implement policies that would encourage education and training in engineering and other technical disciplines at both the university and industry level[7] (Gov. Doc. 7, p. 258).

(2) The report and testimony provided by the House of Representative's Steering Committee of The Task Force on High Technology Initiatives

In a report and testimony provided by the House of Representative's Steering Committee of The Task Force on High Technology Initiatives (which had been charged to develop recommendations that would help United States high technology industries to meet international competition), there were no recommendations related to improving quality or quality awards. This omission is

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[7] Most of Lodge's recommendations are consistent with Japanese practices, which have been credited with contributing to Japan's rising national competitiveness. Lodge's suggestions would be extremely difficult, if not impossible, to implement in the United States, because the ideologies of Japan and the United States are at opposite ends of the communitarianism - individualism continuum (Lodge & Vogel, 1987; Brush, 1997).

significant because the high technology industries have been adversely impacted by Japanese competitors, which have successfully used quality management practices as part of their competitive strategy. The recommendations by the Steering Committee of The Task Force on High Technology Initiatives were focused on improving research and development policies, making improvements at all levels of education, improving worker training, revising tax polices for research and development, improving the enforcement for protecting intellectual property, revising regulations (such as antitrust), and revising policy on trade reciprocity (Gov. Doc. 7).

(3) Report by the International Economic Affairs Department

A report included in the appendix of the hearings transcripts, "U.S. Trade Balance at a Turning Point," which had been produced by the International Economic Affairs Department in June of 1986, proposed that the decline in United States national competitiveness could be reversed by increasing the export of United States manufactured goods. To give effect to this proposed solution, the Report recommended modifying national policies and laws including: tax reform and in particular shifting tax burdens to the consumer, exchange rate policy, revising antitrust laws, and reforming product liability laws. Again, there was no mention of quality.

Quality related testimony

Approximately twenty five percent of the testimony presented to The House of Representatives Subcommittee on Science, Research, and Technology addressed the issue of quality as a factor affecting the national competitiveness of the United States. This testimony, which was given by Dr. Tribus, Dr. Juran, Mr. Hudiberg, and Mr. Hansel, also introduced to the Congress the idea of, and argued the merits of, establishing a national quality award.

(1) Testimony by Dr. Myron Tribus, Director of the Center for Advanced Engineering Study, at Massachusetts Institute of Technology.

Dr. Myron Tribus, speaking on behalf of the National Society for Professional Engineers (NSPE), began his testimony by stating that the greatest problem facing United States national competitiveness was "the way our managerial corps look at how they are supposed to run our enterprises. They do not understand how to implement this most important philosophy: constant improvement" (Gov. Doc. 7, p. 23). In referencing constant improvement (or continuous improvement), Dr. Tribus, was invoking one of three generally recognized fundamental tenets of total quality management (the other two being market orientation and employee empowerment).

In the balance of his testimony, Dr. Tribus identified the principal source of problems with quality improvement in the United States as belonging to the nation's schools of business. He stated that "their objective is to have as alumni the heads of the Fortune 500 . . . Unfortunately they teach their students to regard the enterprise primarily as an investment portfolio to be managed mostly from financial figures" (Gov. Doc. 7, p. 26). Instead, he argued, "we have to teach people that quality is never your problem – it is the way you solve problems. Very few managers understand that when you concentrate on improving the quality of everything you do, then your problems go away" (Gov. Doc. 7, p. 27).

Tribus said that the Japanese have a very good understanding of the positive impact that a concentration on quality can have for the entire organization. He further stated that the Japanese, for more than 30 years, have consistently taught the benefits of quality. Dr. Tribus used the following example to illustrate his point. In 1975 Hewlett Packard used data from all of its plants, world wide, and analyzed the failure rate for components. Based on this data, Hewlett Packard determined that its Yokogawa plant in Japan had the highest failure rate and the lowest profitability rate. Confronted with these facts, the General Manager of Yokogawa Hewlett Packard (YHP), Ken Sasaoka, decided that as a means to improve YHP's operations, YHP would try to win the Deming Prize. By 1980 YHP operation had the lowest failure rate and highest profitability of all

Hewlett Packard manufacturing operations (Gov. Doc. 7).

Responding specifically to the question from Congressman Brown, on whether a national quality award would make a "worthwhile contribution" toward addressing the problem of improving the Nation's productivity, Dr. Tribus again relied on an example from Japan. He said the Japanese found it "extremely useful to have a unifying theme" (Gov. Doc. 7, p. 55) that would lend focus to their work. He then proposed the following four parameters for a United States national quality award program:

(1) The award should be given to institutions in the private sector.

(2) A company that wins the award should be required to provide a report that describes "what they were like before, what they did, and what results they got . . . . It should teach people how to do likewise" (Gov. Doc. 7, p. 55), with an emphasis on how they trained their employees.

(3) A winning company would have to demonstrate "many things. A lot of it is cribbed from the Deming Prize in Japan" (Gov. Doc. 7, p. 55).

(4) The award should be given only to companies that demonstrate company-wide quality management, and the involvement of all personnel throughout an organization.

Dr. Tribus concluded his testimony by stating:

> The Japanese have staked their future on quality and productivity. We invent and they produce . . . . MIT has been an extraordinary resource for invention — not for innovation, for invention. The process of innovation is something the Japanese have studied very carefully, and they can take an invention and innovate with it more rapidly than we. And then when they produce it, they can produce it at higher quality and lower cost than we because we do not educate people for those functions (Gov. Doc. 7, p. 57-58).

When Congressman Ritter asked Dr. Tribus how a company could be both innovative and productive, Dr. Tribus replied: "A company that is well organized for innovation and for quality and productivity will be very receptive to invention" (Gov. Doc. 7, p. 58).

(2) Testimony by Dr. Joseph Juran, Chairman of the Juran Institute.

Dr. Joseph Juran has spent most of his professional career as an advocate for the advancement of quality management practices. He and Dr. Armand Feigenbaum are credited with first defining and promoting the concept of total quality management (Ishikawa, 1985). Dr. Juran and Dr. G. Edwards Deming are

credited with introducing quality management practices to the Japanese following WWII (Juran, 1996).

Dr. Juran began his testimony by saying that "in the last several decades we have lost our quality leadership. [In many cases it] has passed to Japan, a country whose quality reputation had been one of the worst" (Gov. Doc. 7, p. 127). He then argued that the problem was not that United States quality has declined but rather that "the Japanese have revolutionized their quality at a pace which has no precedent in industrial history" (Gov. Doc. 7, p. 127).

"[T]o get out of this crisis"(Gov. Doc. 7, p. 128) Dr. Juran proposed that we, in the United States, should "create our own quality revolution" (Gov. Doc. 7, p. 128). He further proposed that this revolution could be supported by establishing a national prize to recognize a high attainment in quality, and that the national prize must have three criteria:

1. It must be sponsored by a respected non-profit organization.
2. It must use "agreed criteria for judging high attainment in quality" (Gov. Doc. 7, p.129).
3. Its judges must be qualified and must function within an independent body.

Although Juran was in support of the Government establishing a national quality award, he made it clear that, in his opinion, the Government should focus its role on improving the regulatory environment, and developing policy that will stimulate an environment, where competition will drive improvements in quality. Juran stated:

> My own conviction is that the competitive marketplace will be the prime means of stimulating our companies to regain their quality leadership. . . I believe that the Government can help mainly by providing a climate in which the competitive marketplace can function freely and naturally (Gov. Doc. 7, p. 129).

Juran added that the Government, whose principal criteria for purchasing goods and services is cost, could facilitate this climate by placing an increased priority on quality (Gov. Doc. 7).

(3) Testimony by John Hudiberg, Chief Executive Officer of Florida Power and Light Co.

John Hudiberg, who was responsible for introducing the idea and the benefits of a national quality award to Congressman Don Fuqua, began his testimony by stating his unequivocal support for a national quality award. Hudiberg

rationalized his support by stating:

> A commitment to excellence in manufacturing and services is essential for the well-being of the U.S. economy and our society. We believe that a national quality award would stimulate this process for the pride and recognition and for the resulting competitive edge of greater profitability (Gov. Doc. 7, p. 131).

Hudiberg then used Japan's Deming Prize as his point of departure. "The Deming Prize for outstanding statistical quality control contributions is the most prestigious achievement a company can earn. A close look at its objectives has provided us with an understanding of what our award must consist of if it is to be equally meaningful" (Gov. Doc. 7, p. 131). He then outlined what he believed should be the essential elements of a national quality award.

1. It must be prestigious. His suggestions for establishing prestige were to limit the number of awards to a few per year, and to have the award presented by the President.
2. It should be established by an Act of Congress to ensure its longevity across Administrations.
3. It should be self-funding, and preferably through the companies that are applicants for the award and that benefit from the award process.

4. It must be earned, by documenting how the company has met a set of rigorous criteria, and by this documentation being examined and validated by a panel of qualified judges.
5. A Government commission should define the policy for the award.

(4) Testimony by John Hansel, Chairman of the Board, American Society for Quality Control (ASQC).

John Hansel began by contrasting the management development process in the United States and Japan by saying:

> Our graduate schools are cranking out corporate soldiers who are concerned with winning the battles of short term profits but know little or nothing about product or process management. By contrast our management counterparts in Japan are coming up through the ranks . . . . Every Japanese manager has combat experience on the assembly line. They know the ins and outs of production which is synonymous with quality over there. So when they become officers they manage for quality (Gov. Doc. 7, p. 145).

Hansel continued contrasting differences in how Japan and the United States perceived the importance of quality. He noted that the United States did not

include quality as part of their national agenda, and that the United States does not have a resolve to emphasize quality. "The clearest difference between the United States and Japan is not product quality but a national purpose and resolve to put quality first. Simply put Japan has the resolve, America does not" (Gov. Doc. 7, p. 145).

He argued that increasing national competitiveness in the United States did not require developing additional quality technologies or strategies. Rather, in his opinion, it required "the resolve and the relentless pursuit by top management in industry and government to implement existing technologies" (Gov. Doc. 7, p. 145).

When asked what can the United States government do to correct problems related to deficient quality in products and processes, Mr. Hansel replied, *inter alia*, by quoting the following from the Quality Manifesto[8].

> Government must assume the lead role in declaring and defining the importance of quality as a national priority. It must make clear that quality which enhances productivity and reduces cost is the most effective, competitive strategy for economic survival and

[8] The Quality Manifesto was drafted in May, 1986 by the American Society for Quality Control (ASQC).

> prosperity. All government products and services must be procured and dispensed with a relentless pursuit for quality (Gov. Doc. 7, p. 146).

This quote by Hansel is the only reference made at the hearings to a relationship between quality and productivity. This quote is entirely normative, in that it simply states that there is a relationship between quality and productivity without providing any evidence or rationale supporting the existence of a relationship.

Although Hansel emphasized the importance of quality, he was not a proponent of a national quality award. He questioned whether an award was "the best motivational strategy at our disposal?" (Gov. Doc. 7, p. 146) And replied that the ASQC did not think so.

He stated that his lack of support for a national quality award was based on ASQC's view that at this stage of global competitiveness American industry would not benefit from a competition among United States businesses for a national quality award. He further stated that he was opposed to a motivational strategy that had "winners and losers" (Gov. Doc. 7, p. 147). Rather, he suggested instead that the best way for the Government to influence the quality of United States products and services would be by setting an example for industry to follow.

Hansel then hedged his opposition to the establishment of a national quality award by saying that if a national award were created, ASQC would support it. But even this support would be subject to the award having a proper context, which he defined as it being based on the successful framework and model used in the NASA Excellence Award for Quality and Productivity (which the ASQC administers[9]) (Gov. Doc. 7,p. 147). This framework, according to Hansel, would have two principal elements:

1. A technical assistance program that would provide guidelines and training.
2. Managing the process for the effective sharing of strategies with industry and Government (Gov. Doc. 7).

Conclusion of the 1986 Hearings on National Competitiveness

After all speakers had presented their testimony, Congressman Brown noted the agreement from the speakers on the critical involvement by top executives to the success of any quality improvement program. Brown asked the speakers how the Government could assist in preparing executives, principally from the fields of accounting, law, and finance, and not educated or experienced in the

[9] According to the ASQC, The NASA Excellence Award was "the first national quality award in the United States" (www.asqc.org\about\history.html). However applicants for the Award were limited to NASA prime contractors, subcontractors and suppliers.

challenges of managing quality improvement.

Hudiberg and Juran replied that the Government could assist by developing a national consensus on the importance of quality improvement. Congressman Brown responded:

> Well, I think it's important that we all recognize that this problem is embedded in certain rather important cultural traits and societal attitudes which we're going to have to change. This desire for a quick buck is almost identified as part of the American way. And it may be that it's our biggest problem right now because it doesn't give us the long-term perspective necessary to really improve quality (Gov. Doc. 7, p. 165-166).

Brown's comment is supported by numerous authors including Ishikawa (1985), Morrison & Radhim (1993), Cole (1995), and Larson & Sinha (1995). All of these authors have diagnosed the failure of quality management practices to root in the United States as the result of frustration by top executives of not achieving immediate results from their quality management implementations.

The National Quality Improvement Award Act of 1986

On August 1, 1986, The National Quality Improvement Award Act of 1986 (H.R. 5321) was introduced in the House of Representatives. This was the first bill proposing a national quality award.

The bill shows the influence of the quality related testimony given at The House of Representatives Subcommittee on Science, Research and Technology hearings on June 24-26, 1986; and the influence of the testimony by John Hudiberg is particularly evident.

No further action was taken on H.R. 5321. There is text in the bill, however, that is significant when studying the developments and evolution in the Government's perception of the possible impact that a national quality award program could have on increasing the Nation's competitiveness and the Nation's productivity growth rate.

In Findings 2 and 3 of H.R. 5321, it states that the "Nation's productivity growth has decreased in relation to our competitors . . . a failure to alter the trend will lead to a lower standard of living;" (Gov. Doc. 8, p.2) and in Finding 7 of the bill, it states that "quality improvement programs, through a commitment to excellence

in manufacturing and services, are becoming more and more essential to the well-being of our Nation's economy and our ability to compete effectively in the global marketplace" (Gov. Doc. 8, p.3).

Other text in H.R. 5321 is significant because it reflects the importance given by the Congress to Japan's success as a foreign competitor. In Finding 4, H.R. 5321 notes the status of Japan in 1985 as the world's top creditor nation and the United States a net debtor nation (Gov. Doc. 8, p. 2). The fifth finding states: "in Japan, the Union of Japanese Scientists and Engineers sponsors a national quality award—the Deming Prize—which provides a powerful incentive to Japanese companies to promote quality improvement" (Gov. Doc. 8, p. 2).

The National Quality Improvement Act of 1987

Congressman Fuqua was not re-elected, however, on January 28, 1987, H.R. 812 (the second version of The National Quality Improvement Award Act) was introduced by Congressmen Walgren and Boehlert of New York.

On March 4, 1987 hearings were held on H.R. 812, principally to address two questions: (1) should there be a national quality award? and (2) if there should

be an award, what form should it take? Testimony was provided by John Hudiberg, Dr. Frank Gryna, and William Eggleston (Gov. Doc. 9).

(1) Testimony by John Hudiberg, CEO of Florida Power and Light Co.

Hudiberg, the only person to present testimony at both hearings, restated his ongoing commitment to a national quality award, again referenced the success that Japan has had from such an award,[10] and again stated his view on what should be the essential elements of a national quality award. However, he also added what he called an additional incentive. This incentive was that "[w]e need to establish benchmarks of quality by which corporate America can be measured and we need to allow those companies which achieve such heights, to shout it to the world" (Gov. Doc. 9, p. 181).

(2) Testimony by Dr. Frank Gryna, Vice President, Juran Institute, Inc.

Dr. Frank Gryna spoke on behalf of, and principally from the prepared statement by, Dr. Joseph Juran.[11] He began his testimony by saying: "To me the key words

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[10] In 1984 "The Deming Prize Committee decided to open the Deming Application Prize to overseas companies" (Deming Prize, p.26). In 1987, the Deming Prize was established specifically for overseas companies. In 1989 FP&L was the first overseas company to be awarded the Deming Prize.

[11] Juran had voiced his support of a national quality award in the Congressional hearings held in June of 1986.

in the Act are quality improvement" (Gov. Doc. 9, p. 194), and argued that because Japan produces 54 saleable chips out of every 100 fabricated, whereas the United States produces only 17, "there is simply no way of carrying out international competition against someone [sic] who gets three times as much saleable product from the same extent of facilities, materials and labor" (Gov. Doc. 9, p. 194).

Gryna attributed Japan's success to its ability to make improvements at a pace much greater than similar workers in the United States, and maintained that "an absolutely indispensable criterion for receiving the award should be results in the form of actual improvements made in quality" (Gov. Doc. 9, p. 195). He further requested that the text in the Act emphasize that winning organizations must demonstrate outstanding improvements and demonstrate that all personnel in the organizations have been trained and are involved in quality improvement activities" (Gov. Doc. 9, p. 195). In Juran's prepared statement, he writes that "the *sine qua non* of the Award should be results — actual improvements made in quality" (Gov. Doc. 9, p. 201).

(3) Testimony by William Eggleston, Vice President for Quality, IBM.

William Eggleston provided the following input for the award and the award program:

1. Award winners should be determined by tangible market based results.
2. Applying should not be overly bureaucratic such that it would deter prospective applicants from applying.
3. **It should be founded on continued improvement.**

Eggleston emphasized that "the last point is critical to success. We must be certain that the award is given to companies that exhibit sustained success in achieving real results. This will be a major factor in the Award's credibility and motivational force" (Gov. Doc. 9, p. 216).

Despite his enthusiasm for a national quality award, Eggleston warned against the danger of borrowing a solution from a totally different environment. "Please be aware in the administration structure not to blindly copy what the Japanese have done. The differences in relationships between Government and industry make what they have done, not totally applicable to the American scene" (Gov. Doc. 9, p. 206). In later testimony, with the encouragement of Congressman Walgren, Eggleston elaborated on this point by noting two specific areas that a United States national quality award program could not copy from Japan's Deming Prize: (1) In Japan, review teams are made up of people from the industry, whereas in the United States it would not be feasible to share confidential and proprietary information with competitors; and (2) In Japan, reporting is uniform across industries, whereas in the United States this would

not accommodate the inherent individuality that exists in organizations (Gov. Doc. 9).

Conclusion of the Hearings

The Congress had now listened to testimony on the merits of a national quality award for two consecutive years. However it is evident in the Congressional Record that Congress was not concerned with the quality of United States products and services. Rather, a national quality award offered Congress a non-partisan, low- or no-cost solution that could be said to address the trade deficit. This is supported by

Congressman Walgren's closing statement at the hearing: "The Administration is running with this bill, as well, which makes it a very live vehicle and something that should not really be controversial. There is no reason for it to be. Certainly, it is relatively low cost" (Gov. Doc. 9, p. 214).

Report by the House Committee on Science, Space, and Technology

On May 18, 1987 the report on the National Quality Improvement Act of 1987,

(H.R. 812) was published by the House Committee on Science, Space, and Technology. This report supported the establishment of a national quality award, but introduced four factors that were not in the language of the Act that was introduced in January 1987. These were: (1) A shift in emphasis from quality *per se*, toward quality as a means of improving productivity; (2) A decrease in emphasis on award winners being required to demonstrate quality improvement; (3) Clarification of how the award program would be funded; and (4) Support for the Act by the Administration conveyed through a statement by Secretary of Commerce, Malcolm Baldrige.

(1) A shift in emphasis from quality *per se*, toward quality as a means of improving productivity

Congress had shifted its perception of a National Quality Improvement Act from quality *per se*, toward quality as a means of improving national competitiveness and productivity. This is supported in the text taken form the Report section "Statements on the background and need for legislation" (Gov. Doc. 10, p. 5).

> Until a few decades ago, the U.S. was a world leader in quality, and that leadership provided us with a broad market for our products both domestically and overseas. In recent years, however, that leadership role has been challenged strongly by

> foreign competition and our Nation's productivity growth has fallen behind those of our competitors. American business and industry are beginning to understand that . . . improved quality of goods and services goes hand in hand with improved productivity, lower costs and increased profitability (Gov. Doc. 10, p. 5).

The testimony provided in the hearings in support of a national quality award often referenced a relationship between improving quality and improving national competitiveness. There was, however, no evidence or argument provided in the Report that supported the existence of a relationship between improving quality and improving productivity. This absence of evidence or argument notwithstanding, the Report states clearly that the rationale for improving quality was to improve productivity and national competitiveness (Gov. Doc. 10).

(2) A decrease in emphasis on award winners being required to demonstrate quality improvement

Although the testimony in support of a national quality award emphasized the need for award winners to demonstrate improvements in quality, the Report indicates that demonstrating improvements in quality would not be required. The report states:

> While showing quality improvement is an important ingredient in selecting medalists, the judges also are to consider the level of quality exhibited within an organization at the time of the implementation of its quality improvement program with the objective of not penalizing companies that were already doing business at a high level of quality before the award was established (Gov. Doc. 10, p. 7).

(3) Clarification of how the award program would be funded

The Report stated that:

> The funding including the administrative costs of running the awards program, is to come from private contributions, or if necessary from the fees assessed on the organizations applying for the award. The fee structure is to be set at a level which recovers the full costs of the audit program through which awardees are selected (Gov. Doc. 10, p. 7).

The Report included a budget impact statement from the Congressional Budget Office, prepared by Edward Gramlich, the Acting Director. In his statement, Gramlich confirmed the absence of any Government funding for the award

program — and that "The entire award program, including administrative costs, would be funded by private contributions, or by a fee charged to applicants for the award. No costs would be incurred by state or local governments from enacting this bill" (Gov. Doc. 10, p. 9).

(4) Support for the Act by the Administration conveyed through a statement by Secretary of Commerce, Malcolm Baldrige

The Report included the following statement by the Secretary of Commerce in support of the Act by the Reagan Administration :

> In explaining the President's reasoning for establishing a national goal of assuring American competitive preeminence into the next century, the White House announced that business must work more efficiently; setting high standards of quality; streamlining operations; discarding outmoded systems and management styles; adapting to change; and building on their tradition as entrepreneurs who saw a better way, had a better idea, worked a little harder. H.R. 812 seeks, with a minimum of Federal intrusion or cost, to encourage effective quality management and, as such, is entirely consistent with the President's objectives (Gov. Doc. 10, p. 12-13).

Passage of HR 812

On June 8, 1987, the House of Representatives debated and voted on H.R. 812. During the debate Congressmen Lujan and Boehlert emphasized that there would be no public sector costs for the bill, and Congressman Walgren expanded the expectations for the Act (Gov. Doc. 11).

Congressman Lujan stated that:

> Regarding the cost of this bill, the administrative costs of this program will come from private sector contributions. Fees may also be assessed on those applying for the award. Therefore not only will industry pay for their quality improvement, they will also bear the cost of the national recognition (Gov. Doc. 11, p. 14876).

Congressman Boehlert stated that:

> The bill encourages American business to relearn the old lesson — quality sells. And the bill actually helps business help themselves since the National Quality Award would be funded entirely from the private sector" (Gov. Doc. 11, p. 14877).

Congressman Walgren stated that:

> The objective of the National Quality Improvement Act is to encourage the spirit and values that are necessary to make the United States the best manufacturer in the world by quality, cost, reliability, or any other measure important to worldwide competitiveness (Gov. Doc. 11, p. 14877).

H.R. 812 was passed by the House of Representatives on June 8, 1987.

The Malcolm Baldrige National Quality Improvement Act of 1987

The prospect for the National Quality Improvement Act becoming Law in 1987 was bleak, because although the House bill (H.R. 812) had been passed, no Senator had expressed an interest in introducing a companion bill in the Senate.

On July 25, 1987, Secretary of Commerce, Malcolm Baldrige suffered a fatal accident. Three days later, on July 28, 1987, Senate companion bill S. 1251, was introduced to the Senate. With three exceptions, S. 1251 was almost identical to H.R. 812. The exceptions were:

1. The name of the Act and the Award were changed to honor the late Secretary of Commerce, Malcolm Baldrige.

2. In H.R. 812 the purpose of the Act was to establish a National Quality Award for the single purpose of encouraging quality improvement. In the Senate version, however it is stated that:

> The purpose of the bill is to establish a Malcolm Baldrige National Quality Award program, in honor of the late Secretary of Commerce, Malcolm Baldrige,[12] with the objective of encouraging American business and other organizations to improve the quality of their goods and services (Gov. Doc. 12, p. 1).

3. The report also included reference to Malcolm Baldrige's personal interest in H.R. 812, stating that:

> He saw quality and performance as the keys to this country's prosperity and long-term strength. He had a lifetime of interest and experience in manufacturing . . . . He supported programs in the Department of Commerce to help American manufacturers (Gov. Doc. 12, p. 2).

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[12] In an interview, on May 20, 1997, with Dr. Harry Hertz, Director of NIST, Dr. Hertz said that "the passage of the MBNQIA occurred for one reason: Congress wanted to honor a great Secretary of Commerce, Malcolm Baldrige."

On August 4, 1987 the Report on the Malcolm Baldrige National Quality Improvement Act was presented to the Senate Committee on Commerce, Science and Transportation.

On August 20, 1987 the Malcolm Baldrige National Quality Improvement Act of 1987, became Public Law 100-107.

CONCLUSIONS

This paper presented an examination and analysis of the immediate antecedents to the Malcolm Baldrige National Quality Improvement Act of 1987. The study began in 1982 the year the United States posted its first deficit since WWII. The study ends in 1987 the year the Malcolm Baldrige National Quality Improvement Act was passed. Four conclusions have been drawn as a result of this examination.

Conclusion (1)

The period following the first Wake-up Call (1982 to 1985) was dominated by the economists and quantitativists, who focused on productivity. The economists and quantitativists, who defined productivity growth rate as the key indicator of United States national competitiveness, dominated the 1983 White House Conference on Productivity and convinced Congress that an increase in the productivity growth rate would result in an increase in national competitiveness, and, therefore, an improvement in the United States trade deficit. In 1984, the United States productivity growth rate increased, which meant that there was no longer a need to implement the recommendations that had been developed by

the White House Conference on Productivity to reverse the decline in the United States productivity growth rate. The belief that there was no need to implement any of the Conference solutions meant that nothing was done to implement the proposed National Medal for Productivity and Quality Achievement, which had been one of the recommendations developed at the 1983 Conference.

Conclusion (2)

The period following the second Wake-up Call (1985 to 1987) was dominated by the qualitativists and private sector managers, who focused on quality. Although the productivity growth rate had improved in 1984, the United States trade deficit had continued to deteriorate. This resulted in a serious decline in credibility of the economists and quantitativists, who had argued that an increase in the productivity growth rate would result in an improvement in the United States trade deficit. The decline in the credibility of the economists and quantitativists provided an opportunity for the qualitativists and the private sector managers to influence the Congress and supplant productivity with quality as the dominant contributing factor of United States national competitiveness. This belief by the Congress in the importance of quality as the, or, a determinant of United States national competitiveness, led the Congress to establish the Malcolm Baldrige National Quality Improvement Act.

Conclusion (3)

The name of the Act notwithstanding, an examination of the record indicates that the Act was not introduced and passed because the United States Congress was concerned over the quality of United States products and services. Nor does the record indicate that the Congress was influenced by a desire to correct problems related to the quality of United States products and services.

Conclusion (4)

The record indicates that there were several factors that influenced the Congress to introduce and pass the Malcolm Baldrige National Quality Improvement Act. These factors were:

(A) A concern in Congress over Japan's rising national competitiveness, and a belief that Japan's national quality award had contributed to Japan's commercial success since post World War II. In testimony that addresses specifically the national quality award, and in the language of the NQIAA of 1986, there are specific references to the success that the Deming Prize has had on improving the quality of Japanese products; and there are numerous references in all parts of the record to the strength of Japan's national competitiveness.

(B) A belief in Congress that there is a positive correlation between productivity and quality. Although there was no supporting evidence in the principal documents, there were repeated explicit and implicit assertions to the effect that there is a causal relationship between quality and productivity. Reports and the drafts of the final legislation establishing the NQIA of 1987, make it clear that the Congress believed that improving the quality of United States products would improve United States productivity. This is consistent with Edleman's argument that the Congress frequently ties the achieving of lesser objectives (for example, revising antitrust laws, or, establishing a national quality award) to a larger failed objective (Edleman, 1964, p. 152). (In both of these examples, the failed objective is the improvement of United States national competitiveness.)

(C) The belief in the Congress that the Act would have no cost. There are numerous references in the record of the hearings, the various reports, the draft legislation, and the final legislation, that the Act would have no cost. When studied together and in context, these statements can be interpreted to mean that there was little or no real interest in the merits of the legislation (even as a means of achieving a lesser objective), and that the only reason it was passed was due to the combination of the "apple pie" appeal of quality — combined with the appeal of a no-cost argument.

(D) The death of the Secretary of Commerce. Prior to the death of Malcolm Baldrige, on July 25, 1987, the Senate had indicated no interest in providing a companion bill to HR. 812. On July 28, however, three days following Baldrige's death, Senate bill S. 1251 was introduced. The possible causal relationship between the appearance of the Senate bill and Baldrige's death is supported by the fact that the Senate changed the name of the Act to include Baldrige's name. The possible causal relationship is also supported by the statement made by the present Director of NIST, Dr. Harry Hertz during my interview with him on May 20, 1996, that "the passage of the MBNQIA occurred for one reason: Congress wanted to honor a great Secretary of Commerce, Malcolm Baldrige."

BIBLIOGRAPHY

Brush, K. (1997). International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in the United States, Germany, and Japan from 1945 to 1982. Presented at the South Western Regional Conference of the International Studies Association in New Orleans, March 23, 1997.

Bureau of the Census (1975). Historical Statistics of the United States: Colonial Times to 1970. Department of Commerce: Washington, DC.

Bureau of the Census, (1995). Statistical Abstract of the United States 1995. Washington, DC.: U.S. Department of Commerce.

Cole, Robert E. (1995). The Death and Life of the American Quality Movement. New York: Oxford University Press.

Council on Competitiveness, (1991). A Report on the United States Competitiveness. Washington, DC: Publications Office: Council on Competitiveness.

Council of Economic Advisors, (1993). Economic Report of the President. Washington, DC: U.S. Government Printing Office.

DeCarlo, N. J. & Sterrett, W. K. (1990, March). History of the Malcolm Baldrige National Quality Award. Quality Progress, pp. 21-27.

Dertouzos, M., Lester.R. K., and Solow, R.M. (1989). Made in America: Regaining the Productive Edge. Cambridge, MA: MIT Press.

Edelman, M. (1964). The Symbolic Use of Politics. Urbana, IL: University of Illinois Press.

Hart, C. W., Bogan, C. E. (1992). The Baldrige. New York: McGraw-Hill.

Hearing on the Privatization of the National Technical Information Service, and H.R. 812, The National Quality Improvement Award Act of 1987. 100th Cong., 1st Sess. (1987). (Testimony of John Hudiberg, William Eggleston, Dr. Frank Gryna.)

H. Rpt. No. 100-96 on H.R. 812, "National Quality Improvement Act of 1987," May 18, 1987.

H. R. 5321, 99th Cong. 2d Sess. National Quality Improvement Award Act of 1986. August 1, 1996.

Hoel, A., Clarkson, K., & Miller, R. (1983). Economic Sourcebook of Government Statistics. Lexington, MA: Lexington Books.

Ishikawa, Kaoru (1985). What is Total Quality Control? The Japanese Way. Englewood Cliffs, NJ: Prentice Hall.

Juran, J. M. (Ed.) (1996). A History of Managing for Quality. New York: McGraw-Hill.

Kurian, G. T. (1994). Datapedia of the United States 1790-2000. Lanham, MD: Bernham Press.

Larson, P. D. & Sinha, A. (1995, Spring). The TQM Impact: A Study of Quality Manager's Perceptions. Quality Management Journal, 53-66.

Lodge, G. & Vogel, E. (Eds.). (1987). Ideology and National Competitiveness: An Analysis of Nine Countries. Cambridge, MA: Harvard Business School Press.

Malcolm Baldrige National Quality Improvement Act. Public Law 100-107 (H.R. 812), (August 20, 1987),

Morrison, C. M. & Rahim, M. A. (1993). Adopt a New Philosophy: The TQM Challenge. Total Quality Management, 4, (1), 143-149.

National Productivity Advisory Committee, (December, 1983). Restoring Productivity Growth in America: A Challenge for the 1980's.

National Quality Improvement Act of 1987, (H.R. 812). Cong. Rec, 14875 –14877. (June 8, 1987).

Public Productivity Review, (December, 1982). A Conversation with Roger Porter. pp. 289,292.

Quality Progress, (July, 1986). Quality Manifesto: ASQC Past Presidents Issue Declaration. pp 14,15.

S. Rpt. No. 100-143 on H.R. 812, "Malcolm Baldrige National Quality Improvement Act of 1987," August 4, 1987.

Steeples, M.M. (1992). The Corporate Guide to the Malcolm Baldrige Award. Milwaukee, WI: ASQC Quality Express.

Strategies for Exploiting American Inventiveness in the World Marketplace. 99th Cong., 2d Sess. (1986) (Testimony of John Hudiberg, Dr. Joseph Juran, John Hansel, and Dr. Myron Tribus).

The Productivity Improvement Program: Message from the President of the United States. 99th Cong., 1st Sess. (1985).

Union of Japanese Scientists and Engineers (1990). Deming Prize 40. Tokyo, Japan: Kohie SUZUE.

White House Conference on Productivity Act. Public Law 97-367 (H.R. 7292), (October 25, 1982).

White House Conference on Productivity. (1984), Productivity Growth: A Better Life for America. A Report to the President of the United States. (NTIS No. Pr 40.8:P 94/G 91).

The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation (1988-1996)

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THE UNION INSTITUTE

The Origins, Evolution and Outcomes of the Malcolm Baldrige National Quality Award

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Doctor of Philosophy, Management and International Studies
Doctoral Advisor, Dr. Robert McAndrews
March 22, 1998

The Union Institute, Graduate School of Interdisciplinary Arts and Sciences

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The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation. (1988-1996)

Kathleen E. Brush

INTRODUCTION

This paper is the third in a unified series of three articles, which examines the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award. The three articles were researched, written, and presented at scholarly conferences in partial fulfillment of the author's Ph.D. program at The Union Institute.

The first article in the series is "International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany and Japan from 1945 to 1982." [1] The paper examines the origins of the Malcolm Baldrige National Quality Award (MBNQA)

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[1] This paper was presented at the South Western Regional Conference of the International Studies Association in New Orleans, on March 23, 1997.

by examining the international factors that contributed to the decline in the national competitiveness of the United States between 1945 and 1982. This decline in United States national competitiveness led, in 1982, to the United States posting its first trade deficit since the Second World War (WWII), which initiated a chain of events that led to the passage of the Malcolm Baldrige National Quality Improvement Act in 1987.

The second article in the series is "The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987)." [2] The paper examines the evolution of the MBNQA by examining: the response by the Congress to the United States posting its first trade deficit since WWII (in 1982), to the United States becoming a net debtor nation, and to Japan becoming the world's largest creditor nation (both in 1985); the legislative origins of the idea for a national quality award, the Congressional hearings on the development of solutions to the United States trade deficit, and other events that led to the introduction of the National Quality Improvement Act of 1986; the introduction of the 1987 version of the Act, the related Congressional hearings, the shift in emphasis from productivity improvement to quality improvement; the amendments to the 1987 Act; and, on August 20, 1987, the passage of The

[2] This paper was presented at the 1997 annual conference of the Business and Economics Society International, in Athens, Greece, on July 19, 1997.

Malcolm Baldrige National Quality Improvement Act.

The third article in the series is "The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation. (1988-1996)." [3] The purpose of this paper is to study the outcomes of the MBNQA by presenting an analysis of the performance of the Malcolm Baldrige National Quality Award (MBNQA) using two sets of primary data: (1) the Malcolm Baldrige National Quality Improvement Act legislation and related congressional testimony; and (2) the original documents that were provided by the winning companies, which include documents that the legislation requires each winning company to produce and make available to other United States organizations — and other documents that describe the measures taken by the company, that resulted in it winning the Award.

This paper is premised on the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation (as informed by the congressional testimony) with the observable results of the implementation of the legislation. Consistent with this premise, this paper analyzes the performance of the MBNQA by comparing the objectives and criteria contained in the Malcolm Baldrige National Quality Improvement Act of

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[3] This paper was presented at the annual meeting of the American Association of Behavioral and Social Sciences, in Las Vegas, on January 13, 1998.

1987, with the measures taken by the twenty eight companies that won the Malcolm Baldrige National Quality Award, from 1988 through 1996.

The paper is presented in three sections. *Section 1: The Objectives and Criteria Contained in the Legislation*, Part A, presents the policy objective of the Act, and provides a summary of the origins of this policy objective. Part B, develops from the Act (as informed by the congressional testimony) a set of seven performance criteria, and provides a brief overview of the origins of each criterion.

Section 2: The Measures Taken by the Twenty Eight Companies that Won the MBNQA, provides a report on each of the companies that won the Award between 1988 and 1996. Each company report includes a brief company profile, lists the documentation provided by the company, summarizes the quality related measures taken by the company, and details the measures taken by the company against the criteria contained in the legislation — using the seven performance criteria developed in Section 1.

Section 3: The Analysis, provides an analysis of the data presented in Section 2, using the seven performance criteria developed in Section 1. In each case, the performance of all twenty eight companies is examined against one of the seven performance criteria. It is important to note that this paper does not attempt to address broader measures that could be applied to the performance of the

MBNQA, such as its impact on productivity, national competitiveness, or the United States balance of trade. Rather, the scope of the paper is limited to the objectives and criteria contained in the legislation (as informed by the congressional testimony), and the observable results of the implementation of the legislation that are contained in the original documents that the legislation requires each winning company to produce, and other documents developed by each winning company, which describe the measures taken by the company that resulted in it winning the Award.

SECTION ONE:

THE OBJECTIVES AND CRITERIA CONTAINED IN THE LEGISLATION

Part A of this section presents the policy objective of the Malcolm Baldrige National Quality Improvement Act of 1987, and provides a summary of the origins of this policy objective. Part B, develops from the Act (as informed by the congressional testimony) a set of seven performance criteria, and provides a brief overview of the origins of each criterion.

Part A. The Policy Objective of the Act

The Objectives

On August 20, 1987, the United States Congress amended the Stevenson-Wyndler Technology Innovation Act of 1980

> to establish the Malcolm Baldrige National Quality Award, with the objective of encouraging American business and other organizations to practice effective quality control in the provision of goods and services (The Malcolm Baldrige National Quality Improvement Act, 1987, p. 724).

The Act expands upon this objective in Sec. 2. (b) Purpose, where it states that the purpose of the Act is to

> provide for the establishment and conduct of a national quality improvement program under which (1) awards are given to selected companies and other organizations in the United States that practice effective quality management and as a result make significant improvements in the quality of their goods and services, and (2) information is disseminated about the successful strategies and programs (The Malcolm Baldrige National Quality Improvement Act, 1987, p. 724)

The second of these two purposes is complemented by Sec. 2. (a) Findings (8), which states that

> a national quality award program of this kind in the United States would help improve quality . . . by — (D) providing specific guidance for other American organizations that wish to learn how to manage for high quality by making available detailed information on how winning organizations were able to change their culture and achieve eminence (The Malcolm Baldrige National Quality Improvement Act, 1987, p. 724)

It appears, therefore, that there are three principal objectives contained in the Malcolm Baldrige National Quality Improvement Act. These are:

1. To establish and conduct a national quality award program, which gives awards to selected companies and other organizations in the United States that practice effective quality management and, as a result, make significant improvements in the quality of their goods and services.

2. To encourage companies and other organizations in the United States to practice effective quality management in the provision of goods and services.

3. To disseminate information about the successful quality management strategies and programs, which provides specific guidance for other American organizations that wish to learn how to change their culture, manage for high quality, and achieve eminence.

The Origins of the Objectives [4]

In 1982, the United States posted its first post WWII trade deficit, which was due in large part to the growing United States trade deficit with Japan. The United States Congress responded to this news by passing the White House Conference on Productivity Act of 1982, which resulted in the convening of the White House Conference on Productivity in late 1983.

In 1984, the findings and recommendations of the Conference were published in "Productivity Growth, A Better Life for America, A Report to the President of the United States." According to this Report to the President, the rise in the United States trade deficit was due to its declining productivity growth rate. The Report to the President recommended numerous solutions for reversing the decline, one of which was the establishment of a National Medal for Productivity and Quality.

In 1984, the United States productivity growth rate increased. This reduced the pressure on the Congress to implement any of the recommendations that had been developed by the White House Conference on Productivity (including the recommendation for a National Medal for Productivity and Quality), because the

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[4] The origins of the objectives of the Malcolm Baldrige National Quality Award are detailed by the author in the second of the three integrated papers, "The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987)."

Report to the President had asserted that an increase in the productivity growth rate would produce a decline in the United States trade deficit. The increase in the productivity growth rate did not, however, produce a reversal in the United States Trade deficit. Rather, the trade deficit continued to rise.

In 1985, the United States Government reported that Japan had become the world's largest creditor nation, and the United States had become a net debtor nation (H.R. 5321,1986). This prompted the Congress to hold Congressional Hearings, in June 1986, to address the United States increasing trade deficit, and more generally to address the decline in national competitiveness.

The Congressional Hearings reviewed alternative solutions to the trade deficit, which included, *inter alia*, reforming the tax code, foreign trade policy, government subsidies, education reform, the need for collaboration among government, industry and education, and the use of quality management practices (Strategies for Exploiting, 1987). Because the United States trade deficit was due in large part to the growing United States trade deficit with Japan, there was a preoccupation at the Hearings with Japan's commercial success, and the possibility of adopting or adapting Japanese methods to improve United States national competitiveness (Strategies for Exploring, 1987).

The adopting or adapting of Japanese methods was, in most cases, seen as impractical because of the vast differences in the Japanese and United States political, economic, social, cultural, historical, and business environment (Brush, 1996a). The exception to this perceived cultural incompatibility, however, was Japan's quality management practices. The Japanese had adopted their quality management practices from practices that were invented and first used at Western Electric in 1926. These United State's practices were taught to the Japanese by members of General MacArthur's staff, who were on loan to the Army of Occupation from Western Electric, (Strategies for Exploiting, 1986, p. 25) — and later, by G. Edwards Deming (Ishikawa, 1985).

In Congressional testimony in support of a national quality award in June 1986, and again in March 1987, there were numerous references and examples that illustrated the significant commercial benefits that had resulted from the implementation of quality management practices by Japanese industries. The Congressional testimony indicated that these practices had been inspired by Japan's national award for quality: The Deming Prize (Strategies for Exploiting, 1986; Hearings on the Privatization, 1987).

There was consensus in the Congressional testimony that there is a direct relationship between quality of products, market share, and return on investment; that the implementation of quality management practices would improve the

national competitiveness of the United States; and that encouraging the implementation of quality management practices in the United States should be a priority (Hearings on the Privatization, 1987, p. 220). This resulted in the passage by the Congress, on August 20, 1987, of The Malcolm Baldrige National Quality Improvement Act.

Part B. The Performance Criteria Contained in the Legislation

The Criteria

Under Sec. 4. (d) Criteria and Qualifications, the Act states that an organization may qualify for the award if it satisfies several administrative and performance criteria (The Malcolm Baldrige National Quality Improvement Act, 1987). The language in this section is broad, however, and does not provide a precise list of performance criteria that are to be used in evaluating applicants for the award. However, an examination of the language in this and other sections of the Act, when informed by the Congressional testimony, allows the compilation of a list of seven performance criteria. These criteria are:

1. Demonstrate managerial leadership in the development and implementation of quality improvement programs.

2. Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.

3. Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.

4. Apply and promote effective training, of all levels of personnel, in quality management practices.

5. Apply and promote worker involvement in quality improvement programs.

6. Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.

7. Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.

The Origins of the Criteria

The Congressional testimony provides insight into the origins of the performance criteria contained in the Act. There are two other sources that also appear to

have contributed to the development of the performance criteria contained in the legislation.

The first, of these two additional sources, are the criteria that are used by the Union of Japanese Scientists and Engineers (JUSE) when evaluating companies that are competing for the Deming Application Prize.[5] Congressional testimony by Hudiberg, Eggleston, and Tribus recommended that the Deming Prize be used as a source to assist in defining a United States national quality award. Hudiberg, in referring to the Deming Prize, said "a close look at its objectives has provided us with an understanding of what our award must consist of if it is to be equally meaningful" (Strategies for Exploiting, 1986, p. 131). Eggleston recommended that there were two specific areas that a United States national quality award program could not copy from Japan's Deming Prize (Hearing on the Privatization, 1987, p. 215). And Tribus noted that award winners would need to demonstrate "many things. A lot of this is cribbed from the Deming Prize in Japan" (Strategies for Exploiting, 1986, p.55).

The second of these two additional sources is H.R. 5321, which was introduced

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[5] The Deming Application Prize is one of three categories of Deming Prizes. The other two categories are The Quality Control Award for Factory, and the Deming Prize for Individual Person. Because the Application Prize recognizes the quality practices of an entire business organization, as distinct from the performance of a single factory or an individual, it is assumed that the Application Prize is the Deming Prize that was referred to in the Congressional testimony and used by the drafters of the legislation.

in the House of Representatives as the National Quality Improvement Award Act of 1986, but was not acted upon. H.R. 5321 was the predecessor to the MBNQIA, and was drafted principally on the input of Hudiberg. Tribus, Juran, and Hansel were asked by Congressman Walgren to review it for completeness (Strategies for Exploiting, 1986). A comparison of H.R. 5321 and the MBNQIA shows that, with respect to performance criteria 1,3, 6, and 7, both documents are almost identical — in both content and form (H.R. 5321,1986).

Performance Criterion 1.

Demonstrate managerial leadership in the development and implementation of quality improvement programs.

In the Congressional testimony by Dr. Myron Tribus, Dr. Joseph Juran, John Hudiberg, and John Hansel, in support of a national quality award, Congressman Brown (who chaired the hearings) noted that all four speakers had said that senior executive involvement was a critical factor in the success of any quality improvement program (Strategies for Exploiting, 1986).

Performance Criterion 2.

Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.

It is widely accepted by scholars and practitioners of quality management, and further noted in the Congressional testimony, that the successful application of quality management practices by the Japanese was due to their wide scale implementation of statistical quality control (SQC) and statistical process control (SPC). This successful wide scale implementation of SQC and SPC is widely believed to have been influenced by the Deming Prize (Strategies for Exploiting, 1986; Hearings on Privatization, 1987). Six of the ten criteria that must be met to be awarded the Deming Prize require the use of statistical methods (The Union of Japanese Scientists and Engineers [JUSE], 1990).

Performance Criterion 3.

Apply and promote the concept and practice of customer orientation, to improve the market demand for manufactured products and services.

The leading writers on quality management, including Deming, Juran, Imai, Ishikawa, and Crosby, emphasize in their writings the importance of customer or

market orientation. There is not a great deal of emphasis in the Congressional testimony concerning a specific performance criterion to promote customer orientation, however, this is possibly because customer or market orientation is a fundamental element of Total Quality Management, and is a basic requirement for success in any quality management program. This is supported by John Hudiberg's testimony that, as a result of being overwhelmed by foreign competition, "customer-oriented management quality management processes were rejuvenated in the United States" (Strategies for Exploiting, 1986, p. 130). The customer orientation text in H.R. 5321 states that "in order to be successful, quality improvement programs must be management-led and customer oriented" (H.R. 5321, 1986, p. 3). This text, which was influenced by Hudiberg, Juran, Hansel, and Tribus, is identical to corresponding text in the Act.

Performance Criterion 4.

Apply and promote effective training, of all levels of personnel, in quality management practices.

Dr. Frank Gryna, in his Congressional testimony in support of a national quality award, requested that the Award require that all personnel be trained in quality improvement activities (Hearings on the Privatization, 1987). Dr. Myron Tribus also emphasized the need for quality training throughout the organization

(Strategies for Exploiting, 1986). The inclusion of this criterion may also have been influenced by the company-wide quality training criteria of the Deming Application Prize (JUSE, 1990).

Performance Criterion 5.

Apply and promote worker involvement in quality improvement programs.

In their Congressional testimony in support of a national quality award: Dr. Frank Gryna stated that all personnel should be involved in quality improvement activities (Hearings on the Privatization, 1987); Dr. Myron Tribus stated that the award should be given only to companies that demonstrated the involvement of all personnel throughout an organization (Strategies for Exploiting, 1986); and John Hudiberg stated that of their four quality management program implementation phases, one focused on getting all employees to apply quality management practices to their daily work (Hearings for the Privatization, 1987).

Performance Criterion 6.

Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.

In their Congressional testimony in support of a national quality award: Dr. Frank Gryna said "to me the key words in the Act are quality improvement . . . An absolutely indispensable criterion for receiving the award should be results in the form of actual improvements made in quality" (Hearings on the Privatization, 1987, pp. 194-195). William Eggleston emphasized that award winners should be selected by tangible market based results, and that the award should be founded on continued improvement (Strategies for Exploiting, 1986); and Dr. Joseph Juran, who was unavailable to give testimony at the March 4, 1987 hearings, wrote in a prepared statement that "the *sine qua non* of the award should be results — actual improvements made in quality" (Hearings for the Privatization, 1987, p. 201). One of the ten Deming Prize criteria states that a company must demonstrate "visible effects, such as quality, serviceability, date of delivery, cost, profit, environment, etc." (JUSE, 1990, p. 23).

Performance Criterion 7.

Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.

In their Congressional testimony in support of a national quality award: Dr. Myron Tribus stated that "A company that wins the award should be required to provide a report that describes what they were like before, what they did, and what results they got . . . . It should teach other people how to do likewise" (Strategies for Exploiting, 1987, p. 55). John Hansel stated that the framework for a national quality award should include a process for effectively sharing strategies with non-winners (Strategies for Exploiting, 1987); and John Hudiberg stated that the award must provide for "those companies which achieve such heights, to shout it to the world" (Hearings for the Privatization, 1987, 181).

This performance criterion reflects the repeated references in the Congressional testimony that a major obstacle to the widespread use of quality management practices in the United States is that it would require cultural changes in the way companies do business. Dr. Myron Tribus stated that the miraculous results that had been achieved by Japanese companies from implementing quality management practices required them to change their cultures. In the decade

that followed WWII most Japanese companies were on the brink of financial ruin, and a complete change of business culture was required for a reversal (Strategies for Exploiting, 1986). John Hansel stated that it was not uncommon for 15-30% of the manufacturing costs for a United States company to be spent on rework, and that for a company to change the poor practices required to minimize rework, it would require a company to change its culture. He emphasized that this would be a long term process (Strategies for Exploiting, 1986)

Congressman Brown emphasized the enormity of the cultural change process that would be necessary for a United States organization to benefit from continuous improvements in quality in his statement.

> Well. I think it's important that we all recognize that this problem is embedded in certain rather important cultural traits and societal attitudes which we're going to have to change. This desire for a quick buck is almost identified as part of the American way. And it may be our biggest problem right now because it doesn't give us that long-term perspective necessary to really improve quality (Strategies for Exploiting, 1986, p. 166).

SECTION TWO:

THE MEASURES TAKEN BY THE TWENTY EIGHT COMPANIES THAT WON THE MBNQA

This section provides a report on each of the companies that won the Award. Each company report includes a brief company profile, lists the documentation provided by the company, summarizes the measures taken by the company, and details the measures taken by the company against the criteria contained in the legislation — using the seven performance criteria developed in Section 1.

The Company Profile part of each report provides basic data on what the company does, when it was founded, where it is headquartered, and its number of employees. The Documentation Provided by the Company part of each report lists the "Standard Overview" that is provided by each winning company, or by the National Institute of Technology (NIST) (which is the administrator of the MBNQA), and lists other documents that were provided by the company in response to my request, or requests. The Summary of Measures Taken by the Company part of each report summarizes the quality related measures that are presented in the documentation provided by the company.

The Performance Criteria Contained in the Legislation and the Measures Taken by the Company part of each report uses information from the Standard Overview and (in twenty five of the twenty eight cases) the documentation provided by the company, to detail the quality related measures taken by the company. This data is presented using the seven criteria developed in Section 1.

It is important to note that no attempt is made (in this section or at any other place in this paper) to use this data to evaluate the extent to which each company satisfied the criteria contained in the legislation. Rather, the sole purpose of this section is to develop data, which is then used in Section 3, to analyze the performance of the Malcolm Baldrige National Quality Award against the objectives and criteria contained in the legislation.

Company Name: **Globe Metallurgical Sales**

Year of Award: **1988**

Award Category: **Small Business**

COMPANY PROFILE

Globe Metallurgical was founded in 1873. It manufacturers and markets silicon metal and ferrosilicon products. The company is headquartered in Cleveland, OH. In 1988 the company had 200 employees (Standard Overview).

In 1984, Arden Sims was hired as President and CEO, with the mandate to effect a turnaround in the company's performance. One element of Sims's turnaround strategy was the development of a quality management program. The implementation of this program — which coincided with demands by the company's customers in the automobile industry for improved quality, and an increase in competition from foreign suppliers — was complicated by two factors: (1) three months after Sims's arrival, the board decided that the company would be put up for sale in 1986; and (2) in 1986, Globe's unions

began a strike that lasted for ten months (Trial by Transformation).

Although the union strike of 1986 and 1987 caused major problems for the company, it provided a window of opportunity, because during this period Globe was freed of its legal requirement to honor job classifications and work rules, which were making it difficult (or impossible) for Sims to implement a quality management program. The strike allowed Globe to bring its quality management practices into full operation; and, in 1987, after three years of operating losses, the company showed a profit. Globe Metallurgical was sold in 1987. The sale was effected through a Leveraged By Out (LBO) by Sims and the company's senior management (Trial by Transformation).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *Evolution of Quality at Globe Metallurgical.* This is a six page overview of the history of quality at Globe, and the significant components of Globe's quality program.

(3) *Trial by Transformation: An Interview with Globe Metallurgical's Arden C. Sims.* This is an article in the May-June 1992 issue of the Harvard Business Review (pp. 117-129), written by Bruce Rayner,

(4) *Awards.* This is a listing of five prestigious quality awards, which have been received by Globe. It is in English, German, and French.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

After becoming President and CEO in 1985, Sims's first turnaround attempts focused on cutting costs. It soon became apparent, however, that these measures, no matter how extreme, would be insufficient to return the company to profitability. Also, the cost cutting measures would not address the demands by the company's major customers, especially Ford and General Motors, for improved quality. Motivated by pressure from Ford and GM, Sims attended a seminar on quality, and used the Ford and GM assessment processes (that were used to certify suppliers) to develop a comprehensive quality practices program. This program then became a component in Sims's turnaround strategy (Trial by Transformation).

Following the LBO, in 1987, worker involvement was encouraged through four new policies: (1) a profit sharing plan, (2) comprehensive communications, (3) bottom-up budgeting, and (4) a commitment to full-employment. The LBO was a "very important piece of the puzzle for transforming the company" (Trial by Transformation, p.125), because it had the effect of driving the company's total quality efforts to every worker (at every level), in everything they did.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The company's CEO, Arden Sims, led the effort to make Globe the highest quality producer of silicon metal and ferroalloy products in the United States. Although the Quality Steering Committee initially included only quality management experts, it was soon changed to include all of the company's senior management.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control, as well as many other computer monitored and control techniques, are used to reduce the cost and improve the quality of the company's products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   The quality management program at Globe was driven by its customers' demands for improvements in quality, including performance improvements and cost reductions. In particular were the demands from

the automobile industry, which mandated sophisticated quality prevention systems from its suppliers. In developing its quality program, Globe borrowed from the quality assessment processes used by two of its largest customers (Ford and GM). To encourage employee involvement in customer orientation, the company implemented a program in which Globe's employees visit customer sites so that they can see how Globe's customers use its products.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   All employees at all levels receive training in quality management practices.

5. **Apply and promote worker involvement in quality improvement programs.**

   All employees are involved in quality improvement programs. "Implementation [of quality practices] has never been a problem . . . the employees embraced the concept that job security and the production of a quality product may be directly related" (Evolution of Quality at Globe Metallurgical, p.4).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

The company's materials specifically attribute a 91% reduction in customer complaints between 1985 and 1987, and the elimination of $11.3 million in operating costs between 1986 and 1988, to its quality programs. The materials partially attribute the company's increases in sales, its ability to compete successfully with foreign manufacturers, and its successful turnaround to its quality management practices programs (Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The corporate specific and situation specific nature of most of the information provided means that it would not be generally usable by other United States organizations to help them learn how to change their culture to achieve eminence. The materials focus on the problems facing Globe's management, which included the union strike, increasing foreign competition, increasing demands by its customers for improved quality, and problems related to its LBO. Although some of the methods used by Globe could be borrowed by companies in similar situations, even for this

limited application the information contained in the materials would be of dubious value, because the materials contain very few details on Globe's quality management practices.

Company Name: **Motorola**

Year of Award: **1988**

Award Category: **Manufacturing**

COMPANY PROFILE

Motorola was founded in 1928. In 1988, the company's principal products were two-way radios, pagers, semiconductors, cellular phones, and equipment for the defense and aerospace industries. The company is headquartered in Schaumberg, Illinois. In 1988 Motorola had 99,000 employees, in fifty three major facilities, worldwide (Standard Overview).

The rapid rise of Japanese manufacturers, in markets served by Motorola, provided the motivation for Motorola's management to begin, in 1981, an "almost evangelical crusade for quality improvement" (Standard Overview, p.1).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *The Motorola Quality Process: Six Sigma.* This is a fifteen page abstract of a speech given in 1989 by Richard Buetow, the company's Senior Vice President for Quality.

(3) *Integrating the Quality Process within the Business Process.* This is an eleven page document describing how quality processes are rooted in business processes.

(4) *Motorola: Facts 96.* This is a one page overview of Motorola in 1996.

(5) *Our Six Sigma Challenge.* This is a technical overview of the rationale behind Six Sigma quality.

(6) *What is Six Sigma?* This is a copy of a presentation. It is not dated, but the context would indicate that it is from 1989 or 1990.

(7) *Six Sigma: Implementation Issues.* This is a three page transcription of an interview, video taped in April 1996, with Richard Buetow, Senior Vice President of Quality.

(8) *Total Customer Satisfaction.* This is a wallet sized document, which provides an overview of Motorola's key beliefs, key goals, and key initiatives.

(9) *Motorola Shares Experiences*. This is an invitation to attend, and registration form for, the Motorola Quality Briefing.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

A focus on achieving Six Sigma Quality is at the heart of Motorola's quality improvement program. Programs and processes have been developed to achieve Six Sigma quality in all areas of the organization's operations.

In addition to a focus on reducing defects, Motorola has also emphasized reducing cycle time, especially in the development of new products. The company uses benchmarking, against more than 125 companies, to validate that it is achieving its objective to be best in its class (The Motorola Quality Process).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Motorola's CEO and senior executive team provide exemplary managerial leadership in the development and implementation of the company's quality improvement programs.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Motorola uses statistical process control extensively in all processes, to improve the quality and cost of its manufactured products, and to achieve its goal of Six Sigma quality.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Motorola uses what it calls the "Voice of the Customer" as one of two significant data input sources for determining the company's ongoing strategic quality goals. The "Voice of the Customer" is also used to guide improvements that are designed to increase the demand for the company's products.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   All personnel at all levels are trained in quality management practices. All employees are expected to attend at least one week of quality training per year.

5. **Apply and promote worker involvement in quality improvement programs.**

Personnel at all levels are involved in Motorola's quality improvement programs. A recognition structure, which encourages and rewards employees for high quality work, averaged three percent of payroll in each year between 1983 and 1987.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Motorola cites significant results from its quality improvement program for the period 1987 to 1996; and the Standard Overview document provided by NIST says that most of Motorola's products have increased their market share both domestically and internationally as a result of the company's quality improvement programs. With the exception of the Standard Overview document (which was provided by NIST), the documentation was not specific to quality management practices that contributed to Motorola winning the MBNQA. Rather, the documentation provided relates to the company's current quality management practices. Also, the documentation contains no data on the results that were achieved in the period prior to winning the award.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Motorola provided very detailed information on Six Sigma: what it is, and how it can be implemented. The company also provided detailed information on integrating quality processes into business processes. The company did not, however, provide detailed information on any other area of its quality management practices, such as strategic planning and leadership, that could help another United States organization change its culture to achieve eminence.

Company: **Westinghouse, Commercial Nuclear Fuel Division**

Year of Award: **1988**

Award Category: **Manufacturing**

COMPANY PROFILE

The Commercial Nuclear Fuel Division (CNFD) of Westinghouse supplies forty percent of the U.S. market for nuclear fuel rod assemblies. It is located in Pittsburgh (PA), Monroeville (PA), and Columbia (SC), In 1988, CNFD had approximately 2,000 employees at its three sites (Standard Overview).

In 1980 Westinghouse founded the Westinghouse Productivity Center, the first center of its kind for a Fortune 500 company. A few years later, this center was renamed the Westinghouse Productivity and Quality Center. (The name of the Center was changed because the company found that when it focused on improving quality it achieved an increase in productivity — whereas when it focused on productivity, this did not produce an increase in quality.)

The Center is responsible for the development, acquisition, and transfer of technologies and techniques that can improve performance. The interest by CNFD in quality practices was spurred by foreign competition, and by the public's heightened interest in the safety of nuclear fuel generation (The Westinghouse Total Quality Experience).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *The Westinghouse Total Quality Experience.* This is a fifteen page report that describes the "quality journey" taken by Westinghouse Corporation, which includes one page of specific information on quality practices at CNFD. Although this document provides information on quality practices used by Westinghouse, rather than by CNFD, it is reasonable to assume that the practices used by CNFD are similar to, or the same as, those used by Westinghouse, because: (1) the practices at all Westinghouse divisions are driven by MBNQA criteria; (2) the practices developed and defined by the Westinghouse Productivity and Quality Center are normally adopted by all Westinghouse divisions; and (3) three other Westinghouse divisions have been finalists for the MBNQA. To make clear the distinction between CNFD and Westinghouse practices, if the materials supplied do

not identify a practice as specific to CNFD, the practice has been noted as a "Westinghouse" practice.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Westinghouse conducts its Total Quality Fitness review on a regular basis. This is a structured review process that allows each Westinghouse division to "benchmark its improvement efforts and identify key issues that must be addressed to achieve excellence" (The Westinghouse Total Quality Experience, p. 4). Westinghouse has conducted more than 700 of these reviews. The company has found a .95 correlation between the scores obtained in the Total Quality Fitness reviews and improvements in operating profits (The Westinghouse Total Quality Experience).

The strategic planning process at Westinghouse is driven by its assessment process. This process includes assessments of a company's financial practices and processes; assessment of customer needs and satisfaction; competitive analysis assessment; a comparative assessment of operations with those of benchmarked companies; and an assessment of consistency of cultural practices (The Westinghouse Total Quality Experience).

CNFD's Total Quality program is built on four imperatives: management leadership, product and process leadership; human resource excellence, and customer satisfaction. The company has a system of "Pulse Points," which is used to measure and evaluate progress made toward objectives assigned to the four imperatives. CNFD uses state of the art technology (including robotics, supercomputer simulators, laser diagnostics, and expert systems), when the company believes that the use of these technologies will result in an improvement in the quality of its products. The company estimates that 75% of all capital allocations in recent years were for the purchase of products and services that would improve quality (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   In 1984 the Westinghouse top management team defined Total Quality as the corporate-wide management model at Westinghouse. Management has assumed the foundational leadership position to achieve this, and has asked everyone in the company to pursue Total Quality in everything they do.

The Quality Council at CNFD, which is made up of management, "sets [the] policies, plans and strategies and directs the quality improvement process" (Standard Overview, p. 2). This process includes management's participation in the monthly meetings where Pulse Points are reviewed.

2. **Apply and promote the use of statistical process control, to improve the cost and quality of manufactured products.**

Westinghouse uses a range of tools, including statistics, to measure and control processes to improve quality and costs. No mention was made, however, of the use of statistical process control *per se*, or of the use of any statistical process control tools.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Customer satisfaction is one of CNFD's four Total Quality imperatives. Westinghouse collects data on many areas related to customer satisfaction with its products, its reputation, and the quality of its services.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

The entire Westinghouse management team is trained in total quality concepts and tools. Approximately 90% of all CNFD employees were

trained in quality practices, or quality awareness, between 1985 and 1988.

5. **Apply and promote worker involvement in quality improvement programs.**

Westinghouse management promotes and sustains the practice of worker involvement in improving quality. One practice promoted by management is the use of quality circles and multi-functional teams, which permeate all operations at Westinghouse. All levels of personnel are involved in CNFD's quality practices. Two thirds of the workers are members of project teams that are focused on improving quality in some area of the organization. The culture at CNFD emphasizes doing "the right things right the first time" (Standard Overview, p.1) and making "every action by every employee a quality initiative" (Standard Overview, p.1).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

CNFD has demonstrated significant improvements in the quality of goods and services, however, most of the results reported are after the fact: that is, these results are for time periods that begin after CNFD won the MBNQA. The results for periods that begin before CNFD won the MBNQA are: from 1983 to 1995, CNFD did not lose one customer; from

1985 to 1995, product returns were reduced by a factor of twenty four; and from 1987 to 1995, CNFD reduced the cost of its optical fiber by 50%, and simultaneously increased profitability. But all of these periods end after the year CNFD won the Award. The company provided no data on results for periods that ended before the year it won the Award.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The documentation provided describes, in some detail, some of the more unique elements of Westinghouse's Total Quality management model. The documentation did not, however, provide a comprehensive view of the total quality processes and practices that have enabled Westinghouse, or more specifically CNFD, to change its culture and achieve eminence.

Company Name: **Milliken and Company**

Year of Award: **1989**

Award Category: **Manufacturing**

COMPANY PROFILE

Milliken was founded in 1865. The company produces more than 48,000 different textile and chemical products. It is headquartered in Spartenburg, North Carolina. In 1989 Milliken had 14,300 employees, in 47 manufacturing facilities throughout the United States (Standard Overview).

In 1981, the senior management of Milliken and Company was perplexed by its inability to compete successfully with Japanese manufacturers of textile and chemical products. Despite the company's focus on quality and its use of advanced technologies, Milliken was losing market share to the Japanese. A close examination of Milliken's Japanese competitors identified significant differences in the management policies and practices in use by the Japanese companies to drive improvements in quality. As a result of these findings, in

1981 Milliken's senior management developed and began the implementation of its "Pursuit of Excellence" strategy (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *Milliken in Motion: A Pursuit of Excellence.* This article is a reprint of an article by Carole Kalogeridis, published in the December 1990, issue of Textile World.

(3) *Milliken Magic Works Miracles in Lagrange.* This is a reprint of an article published in the June 1995, issue of Textile World. The article describes the rebuilding of a Milliken plant that was destroyed by fire. It is not directly related to quality management. Rather it describes a work force that was completely dedicated to its employer; and describes an employer who rebuilt the plant in Spartenburg, rather than re-locate to a lower cost region, because he believed that the productivity of the company's work force in Spartenburg would exceed any hourly labor cost savings realized from a lower cost location.

(4) A cover letter explaining that Milliken is a private company and, therefore, provides a very limited amount of data.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Two keys to the success of Milliken's quality improvement programs have been (1) the use of advanced technologies and (2) the commitment of the company's employees to continuous quality improvement. The work by Milliken employees on "corrective action teams" is considered by Milliken to be a central factor in the company's success (Milliken in Motion).

Milliken benchmarks all of its processes. This benchmarking is based on comparative data that is developed through ongoing "surveillance" of about 400 competitors. The company also attributes the success of its quality improvement programs to the close relationships it maintains with selected suppliers (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The management of Milliken, led by its president, leads the implementation of the company's quality improvement programs.

2. **Apply and promote the use of statistical process control, to improve the cost and quality of manufactured products.**

There are references in the company's materials to extensive data collection and real time monitoring systems, which are used to detect performance aberrations. There is no specific reference, however, to the use of statistical process control to reduce the cost and improve the quality of the company's manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Milliken uses customer action teams extensively to achieve a high level of ongoing customer satisfaction. These teams are also responsible for the creation of products to meet customer and market needs.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Milliken spends an average of $1,300 per employee, per year, on training. There is no mention, however, of personnel training that relates specifically to quality management practices.

5. **Apply and promote worker involvement in quality improvement programs.**

Workers are very involved in Milliken's quality improvement programs. Moreover, they are empowered to exercise considerable authority and autonomy in the execution of processes that effect the company's quality improvement objectives.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Milliken has demonstrated improvements in the quality of its goods and services. From the early 1980s until 1988, productivity increased 42% (which coincided with the elimination of six hundred middle management positions). From 1981 to 1988, the cost of non-conformance was reduced by 60%. From 1984 to 1988, on-time delivery increased from 75% to 99% (Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Milliken provided a very limited amount of data on how it changed its culture and achieved eminence. The company's rationale for limiting the

generally availability of information was contained in a cover letter that accompanied the company's information package. This letter states that Milliken is a privately owned company, and that it does not publish its MBNQA application, because the application contains proprietary information. Milliken does, however, extend training on its quality principles to its suppliers and customers. From 1984 to 1989, 7,500 Milliken customers and suppliers received this training (Standard Overview).

Company: **Xerox Corporation Business Products & Systems**

Year of Award: **1989**

Award Category: **Manufacturing**

COMPANY PROFILE

In 1989, Xerox Corporation Business Products & Systems (Xerox BP&S) was one of two principal Xerox business units. Xerox BP&S designs, manufactures, and markets document processing products and consulting services in more than 150 countries. In 1989, Xerox BP&S had 50,200 employees (Standard Overview).

Xerox Corporation was founded in 1906, and experienced moderate growth until the company introduced its 914 copier, in 1959. The Xerox 914 initiated the copier revolution and, because of the success of this and subsequent products, Xerox dominated the global copier market (with almost 100% of market share) until the 1970s (Xerox: 1996 Fact Book).

During the 1970s the Japanese national industrial plan targeted the copier market, and by 1980 Xerox's market share had declined to less than 50%. In the same year commercially successful Fuji Xerox (Xerox's Japanese joint-venture with Fuji) won the Deming Prize, which supported the argument that there was a positive correlation between quality management and increased sales, revenues, and profits. In 1982 Xerox Corporation, led by Chairman David Kearns, began the implementation of a total quality process, which produced dramatic results. Xerox can now claim that it is the first major United States corporation to regain market share that had been lost to the Japanese (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *Xerox: 1996 Fact Book.* This booklet provides a historical and current overview of Xerox. The current overview discusses its products, its executive team, the company's belief that its role is to serve all of its stakeholders (not just its shareholders), and emphasizes the importance of the company's quality management practices.

(4) *Quality: A Race Without a Finish Line.* This is a six page brochure that explains why Xerox elected to embrace quality management, and

discusses the principle initiatives that makeup Xerox's "Leadership through Quality" program.

(5) *Xerox 2000: From Survival to Opportunity*. This is a reprint of a seven page article (from *Quality Progress*, by Richard J. Lee, March 1996, p. 65-71), which explains the implementation of the company's quality management practices, and how this led to the company's return to leadership in the copier market.

(6) *Leadership Through Quality: The Way We Work.* This is a 45 page booklet that describes the many processes, programs, and values that comprise the quality culture at Xerox.

(7) A list of the 25 national quality awards that have been won by Xerox.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Xerox's quality policy states that: "Xerox is a quality company. Quality is a basic business principle for Xerox. Quality means providing our external and internal customers with innovative products and services that fully satisfy their requirements. Quality improvement is the job of every Xerox employee" (Application Summary, p. 2). According to the company, this policy drives every functional group, and every employee, at Xerox (Xerox: Quality A Race).

Continuous improvement at Xerox is aided by the use of benchmarking. This is

a three step system: all processes are first benchmarked against the industry average, then against the best in the industry, and finally against the best in the world. Quality measures at Xerox go beyond achieving high levels of customer and employee satisfaction. Xerox quality efforts extend to bettering society through community involvement, philanthropy, and preservation of the environment (Xerox: 1996 Fact Book).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The driving force behind Xerox's quality measures was Chairman David Kearns and the company's executive team. Management at all levels are integral to the success of Xerox' quality improvement programs; and all Xerox managers are required to practice their quality principles daily.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   The use of statistical process control has reduced the cost and improved the quality of Xerox's manufactured products. The company uses statistical process control extensively to stay informed, to analyze, and to

diagnose outliers in the performance of the hundreds of measures that are tracked. Tracked measures range from tolerances on manufactured machine parts to employee morale.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   The highest priority for all employees at Xerox is customer satisfaction. To facilitate this, the Xerox planning processes focus on the allocation of all resources to meet the prioritized needs of its customers, with a focus on obtaining continuous price and value improvements.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   Every Xerox employee receives a minimum of 28 hours of quality training, which includes training in the use of core quality tools.

5. **Apply and promote worker involvement in quality improvement programs.**

   Employee involvement is fundamental to Xerox's quality improvement programs and processes. Input from employees, concerning how they can improve quality, is solicited through a variety of mediums. These include: suggestion boxes, periodic surveys, an open door policy,

management-employee communication meetings, management-by-walking-around, and executive interviews (Leadership Through Quality).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

The use of quality management practices by Xerox has resulted in significant improvements in the quality of its goods and services. From 1984 to 1989, the number of complaints received by the Office of the President dropped 60%, the number of defective parts obtained from suppliers was reduced by 73%, unscheduled maintenance decreased 40%, there was a 27% drop in service response time, sales refunds decreased 29%, and employee turnover decreased 36%. In one year alone (1988) teams in manufacturing and development saved $116 million by improving productivity and reducing scrap. The net result of these improvements was that Xerox arrested and reversed the decline it had been experiencing in world market share since the early 1970s (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The documentation provided is detailed and very informative. It includes information that describes the evolution of quality at Xerox (including how the company changed its culture), and provides details on how the company implemented some of its most effective quality practices and processes.

Company: **Cadillac**

Year of Award: **1990**

Award Category: **Manufacturing**

COMPANY PROFILE

Cadillac, which was founded in 1902, is the flagship division of General Motors (GM). It manufactures nine car models: the Reatta and Riviera (marketed by the Buick division of GM); the Toronado (marketed by the Oldsmobile division of GM); and the Cadillac product line, which includes the Allante, Brougham, Seville, Eldorado, DeVille, and Fleetwood. Cadillac is headquartered in Detroit, Michigan. It has approximately 10,000 employees (Standard Overview).

In 1908 Cadillac received its first quality award, the Dewar Trophy, a prize given annually by the Royal Automobile Club of England. It was the first time an American company had received the award. According to the company, the quality leadership of Cadillac went unchallenged until the 1980s, when Cadillac experienced a decline in market share (which the company attributed to exterior

designs that did not meet customer expectations). In 1985 the senior management of Cadillac began the implementation of a turnaround strategy, which included a renewed focus on quality. By 1988 Cadillac had reversed its declining market share (Cadillac: The Quality Story).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *Cadillac: The Quality Story*. This is an eight page brochure that describes the history of quality at Cadillac, and a summary of the quality initiatives that were implemented following its renewed commitment to quality in 1985.

(4) *Highlights of Total Quality Management Philosophies and Applications*. This is a forty two page primer on total quality management, which includes philosophies, tools, and an overview of companies that are considered to be the leaders in total quality management practices.

(5) *For General Motors the Master Plan is Customer Satisfaction and Enthusiasm*. This is a four page flyer that explains the GM Quality Network, which is the entire population of GM employees and departments, working collaboratively together to achieve their objectives

for quality and customer satisfaction.

(6) *GM Vision*. A high quality comic book, that is written for GM workers (hourly and salaried), which explains the Quality Network and the elements and importance of total employee participation in GM's total quality processes.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Cadillac groups the measures it undertook to reverse its declining market share into three categories. These are: (1) a change in corporate culture; (2) continual customer focus; and (3) a disciplined approach to planning (Cadillac: The Quality Story).

(1) Changing the corporation's culture included increasing employee involvement in business processes and teamwork, simultaneous engineering (a term the company coined for its cross-functional collaborative product development process), developing closer partnerships with suppliers, the creation of the UAW/GM Quality Network (which is the partnership between the United Auto Workers and GM that focuses on meeting the company's objectives for quality), and the Cadillac People Strategy (which is the linking of Cadillac's business plan to its human resource strategy).

(2) The company's customer focus became a continual priority, and was applied to both internal and external customers.

(3) The company's disciplined approach to planning was developed and implemented to ensure that all employees participate in achieving the company's annual objectives.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   All strategic initiatives at Cadillac begin with the Executive Staff and end with the employee. Management of the operating units is frequently involved in providing training in quality practices to the employees in their organizations.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control, and other types of measurement, analysis, and control, are used to improve the costs and quality of manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Cadillac defines its "master plan" as the customer satisfaction plan, and "each Cadillac employee is committed to providing the customer with products or services that exceed expectations" (Cadillac: The Quality Story, p. 5).

There are two quality processes that are used to ensure a high level of customer satisfaction: Quality Function Deployment; and The Market Assurance Process. The Quality Function Deployment process influences product design by translating customer input into product specifications. The Market Assurance Process influences the product development process by including customer criteria at each step of the development process (Cadillac: The Quality Story).

Cadillac also claims to provide some of the best customer services in the automobile industry. These include: CADSTAR, which is a dealer service support organization that monitors and assists Cadillac dealers to deliver increasingly higher levels of customer satisfaction; Cadillac Roadside Service, which provides twenty four hour a day, seven day a week, assistance; and the Cadillac Customer Relations Center, which provides immediate response to customer questions and concerns (Cadillac: The

Quality Story).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Cadillac is heavily unionized. To ensure that union employees could participate in Cadillac's quality initiatives, the company took special measures to ensure that the UAW would support the quality initiatives. This resulted in the UAW/GM Quality Network, which provides, *inter alia*, that all personnel (hourly and salaried, union and non-union) are trained and involved in quality management.

5. **Apply and promote worker involvement in quality improvement programs.**

Cadillac's business plan, which is also its quality plan, is designed to ensure that all employees play an active role in the company's quality improvement programs (Cadillac: The Quality Story).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Cadillac has demonstrated significant improvements in the quality of goods and services. From 1986 to 1990 warranty related costs

decreased 30%, lead time for a new model decreased by 40 weeks, tests for reliability and durability improved 67%, machine uptime improved 20%, engineering changes decreased 56%, productivity increased 58% per employee, the number of cars that met their scheduled build time increased 67%, the number of suppliers delivering just-in-time increased 415%, and overall customer satisfaction increased 8%. Employee turnover is less than three tenths of one percent per year, which is the lowest in the automotive industry (Application Summary; Standard Overview; Cadillac: The Quality Story).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The documentation provided by Cadillac is very detailed, and provides information that can be used by other companies to change their culture and achieve eminence. The company also provided useful information on the quality management philosophies and practices used by other MBNQA recipients.

Company Name: **Federal Express**

Year of Award: **1990**

Award Category: **Service**

COMPANY PROFILE

Federal Express began operations in 1973, with eight small aircraft. By 1990, the company was processing 1.5 million shipments daily, at 1,650 processing sites, and had the world's largest air cargo fleet. In 1990, the company had 90,000 employees (Standard Overview).

From the beginning, the management philosophy of the company's founder, Frederick Smith, has emphasized people, service, and profit — in that order. Smith maintains that the high levels of customer satisfaction, and revenue growth, that Federal Express has sustained is due to this philosophy. In addition to its people, service, and profit philosophy, each year Federal Express sets increasingly higher goals for quality performance and customer satisfaction (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

The company provided no information. I made five requests (two by fax, one using the company's web site, and two by telephone) to Federal Express for information on how it won the MBNQA, but received nothing. I represented myself as a partner of Intek Management and as a student of the Union Institute, but still to no avail. The following assessment is based, therefore, solely on the Standard Overview provided by NIST.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Federal Express measure themselves against a "100 percent service standard" (Standard Overview, p.2) for customer satisfaction. To achieve this goal, twelve service quality indicators have been defined and are regularly tracked using advanced computer tracking systems. The data collected is extensive, down to the individual package level, and is housed in thirty major databases. This data forms the basis for analysis and improvement, and for defining future products.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Management is charged with leading the company's quality improvement programs. Management also plays an active role in heading up cross-functional quality improvement teams.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Although the company uses extensive data analysis, to reduce cost and improve quality, there is no reference in the Standard Overview to the use of statistical process control.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   100 percent customer satisfaction is the central driver of the company's quality initiatives.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

The Standard Overview makes no specific reference to training in quality management for any levels of personnel.

5. **Apply and promote worker involvement in quality improvement programs.**

The Standard Overview states that "managers and employees strive to improve all aspects of the way Federal Express does business" (Standard Overview, p. 1) It makes no mention, however, of the involvement of all levels of personnel in quality management.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

The Standard Overview contains no comparative measures that demonstrate that quality management contributed to significant improvements in the quality of the company's goods and services. The only measures in the Standard Overview relate to levels of customer satisfaction, rather than improvements. From 1987 to 1990, customer satisfaction scores averaged better than 95%; and in an independently conducted survey of air-express customers, 53% gave Federal Express a

perfect score, compared to 39% for its best competitor.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

It appears that Federal Express does not make available either basic or detailed information related to its quality management practices. The company failed to provide me with information, and provides no information on its World Wide Web home page related to how it changed its culture and achieved eminence.

Company: **IBM Rochester**

Year of Award: **1990**

Award Category: **Manufacturing**

COMPANY PROFILE

IBM Rochester is a division of IBM Corporation, and has worldwide responsibility for the development and marketing of IBM's AS/400 computer systems, and for the development and marketing of IBM's hard disk storage devices. In 1990 there were more than 400,000 AS/400 (and its predecessor) systems installed, sixty percent of which were located outside the United States. IBM Rochester is headquartered in Rochester, Minnesota, and has plants and facilities in many locations world-wide. In 1990, IBM Rochester had approximately 8,000 employees (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *The Quality Journey Continues: IBM Rochester 1990 Winner.* This is a twenty page brochure, which describes the key quality processes that are in place at IBM. The emphasis of the brochure is on their quality product processes *per se*, but also addresses customer oriented processes, employee education and training, and social responsibility.

(3) A "pocket summary card," which provides a summary of IBM Rochester's MBNQA application.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

IBM Rochester has fully embedded the three principal tenets of total quality management (employee empowerment, market orientation, and continuous improvement) in both its short and long term operations and plans. The company emphasizes: (1) training and educating its workforce in task specific quality management practices, (2) keeping employees technically current, and (3) cross-functional collaborative processes and initiatives (The Quality Journey Continues).

IBM Rochester began the quality journey in 1981, and has continually raised the level of expectations of its vision, initiatives, and goals for quality. Since 1981, there have been four major shifts in the emphasis the company has placed on quality programs.

In 1981, the emphasis was on product reliability, with a goal of zero defects. In 1984, the emphasis shifted to effective and efficient processes with a goal to evaluate and rate all processes. In 1986, the emphasis shifted to developing partnerships with customers and suppliers, and to measuring the company's performance against competitive benchmarks (with a goal to be the best in the industry). In 1989, the emphasis shifted to quality initiatives that focused on market orientation and on the entire business process (with a goal of total customer satisfaction). And, since 1990, the emphasis has been on (1) employee empowerment, (2) first-to-market with the best product, (3) the customer as the final arbiter, and (4) IBM Rochester as the uncontested leader in customer satisfaction (The Quality Journey Continues).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Management is the source of leadership for quality initiatives, with an emphasis on continuous improvement.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control is used in all operational areas to reduce the cost and improve the quality of the company's manufactured products. The company's defect elimination strategy, for manufactured products, has a goal of Six Sigma.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Customer input and criteria are included throughout the entire product development process. The company's policies designate the customer as the final arbiter for the quality of IBM Rochester's products and services.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

IBM Rochester's quality practices include the training of all levels of personnel.

5. **Apply and promote worker involvement in quality improvement programs.**

Employees are empowered by management to improve quality, and employees at all levels are involved in the quality improvement process.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

IBM Rochester has demonstrated significant improvements in the quality of goods and services. During the 1980s, capital spending on equipment for defect detection decreased 75%; between 1981 and 1990, product reliability increased 300%; between 1983 and 1990, product development times were reduced by 50%, and the cost of manufacturing decreased 60%; between 1986 and 1989, the company achieved a 30% increase in productivity; from 1986 to 1989, revenue per employee increased 35%; from 1986 to 1989, total cycle times were reduced 70%; from 1984 to 1989, engineering change costs decreased 45%; from 1987 to 1990,

customer complaints to executives decreased 47%; from 1987 to 1990, worldwide installations of the AS/400 increased 50%; and from 1985-1989, market share for disk drives increased 100% (The Quality Journey Continues; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The documentation provides detailed information and useful insights into the company's successful quality processes and practices, which could help other United States organizations to change their culture and achieve eminence.

Company Name: **Wallace Company**

Year of Award: **1990**

Award Category: **Small Business**

COMPANY PROFILE

In 1990, Wallace Co. was headquartered in Houston, TX. It distributed pipe, valves, and fittings principally to the chemical and petrochemical industries. The majority of its customers were in the Gulf Coast area, but it also served some international markets. In 1990, Wallace was a family owned company, which had 280 employees (Standard Overview).

In the mid-1980's there was no growth in the Gulf Coast economy, which was Wallace's primary source of revenue. This prompted the company to implement a quality improvement program, which would allow it to become a stronger competitor in the industry, and which would allow it to reduce its dependence on the Gulf Coast economy. The implementation of the company's quality improvement program resulted in impressive improvements in quality and

financial performance (Standard Overview). Since it won the MBNQA, the assets of Wallace Company have been acquired by Wilson Industries.

DOCUMENTATION PROVIDED BY THE COMPANY

Because Wallace Co. is no longer in business, it was not possible to obtain any information from the company. The following assessment is based, therefore, solely on the Standard Overview provided by NIST.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Wallace's quality program focused on three major initiatives. (1) The company built new partnerships with customers and suppliers, and used "surveillance measures" to identify quality suppliers, which resulted in reducing the number of its suppliers from 2000 to 325. (2) It merged business and quality goals into one set of goals, which resulted in a business plan that included 16 strategic quality objectives, nine of which focused on improving customer satisfaction. (3) It instilled in its employees a commitment to customer satisfaction.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The quality programs at Wallace were driven by the company's senior management. Management promoted worker involvement by including employees in the development of the objectives, initiatives, and plans that would comprise Wallace's Quality Business Plan.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control was used to reduce costs and improve the quality of the company's manufactured products. Each of Wallace's ten offices had an onsite statistical process control coordinator, who was responsible for the daily evaluation of performance.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   One of three principal initiatives of the Wallace quality program was to instill in all employees an overriding commitment to customer satisfaction. Nine of the sixteen Quality Business Plan objectives related to customer

satisfaction; customer feedback was solicited through four types of surveys; and the company's Total Customer Response Network required that all customer complaints be resolved within 60 minutes.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All levels of personnel were trained in quality improvement methods. The training for senior management included more than 200 hours of intensive training.

5. **Apply and promote worker involvement in quality improvement programs.**

All levels of personnel were involved in quality management: from defining the guiding quality objectives, to the execution of the plans to achieve them.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Wallace demonstrated improvements in the quality of goods and services. However, it is not clear, from the data in the Standard Overview, if these improvements were significant. From 1987 to 1990, Wallace's market

share increased from 10.4% to 18%; on-time deliveries increased from 75% to 92%; sales volume grew 69%; and operating profits increased by a factor of 7.4.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Because Wallace is no longer in business, it is unable to make available detailed information on how it was able to change its culture and achieve eminence.

Company Name: **Marlow Industries**

Year of Award: **1991**

Award Category: **Small Business**

COMPANY PROFILE

Marlow Industries was founded in 1973. The company manufactures and markets thermoelectric coolers, and small solid state devices that control temperature. The company is located in Dallas, TX. In 1991 Marlow had 160 employees (Standard Overview).

Marlow initiated a total quality management program in 1987, in response to customer demand for continually higher levels of performance (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

The company provided no information. I made four requests (two by fax, and two by telephone) to Marlow Industries for information on how it had won the MBNQA, but received nothing. I represented myself as a partner of Intek Management and as a student of the Union Institute, but still to no avail. The following assessment is based, therefore, on the Standard Overview provided by NIST, and on information accessed through the company's world wide web site.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

The company describes its implementation of Total Quality Management (TQM) as a "top-to-bottom" approach to continuous improvement. The CEO of Marlow drafts the company's five year strategic plan, which then makes its way through the organization to all levels of personnel.

Suppliers also played a key role in the success of Marlow's TQM efforts. Marlow rates suppliers, using the company's own supplier quality index, and only works with a select group that meets the company's criteria. The company then works very closely with this select group to further enhance the quality of their joint products.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Marlow uses a top-to-bottom approach in the development and implementation of its TQM programs. Senior executives serve as mentors to Marlow's "action teams," which are used to improve quality pro-actively, and to attain corporate and departmental goals.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

   The Standard Overview states that Marlow trains its workforce in statistical problem solving, and collects data in 500 categories for tracking performance. There is no reference in the Standard Overview, however, to the use of statistical process control to reduce costs and improve the quality of the company's products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   The Standard Overview states that the overriding aim of Marlow's TQM program is customer satisfaction. The company has implemented several

mechanisms to collect data, which is used to develop focused agendas to meet customer needs.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   Personnel at all levels are required to take Marlow's quality awareness training class. To maintain high levels of performance, Marlow's employees average thirty two hours of training per year.

5. **Apply and promote worker involvement in quality improvement programs.**

   Marlow encourages all employees to participate in the company's continuous improvement processes. All employees have voluntarily taken the company's quality pledge, which mandates "do it right today, better tomorrow" (Standard Overview, p.2).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

   Marlow's quality management practices have resulted in improvements in the quality of its goods and services. However, it is not clear, from the data in the Standard Overview, if these improvements were significant.

From 1987 to 1990, employee productivity increased 10%; the cost of scrap and rework was reduced; the time to market for new products was reduced; worldwide market share increased; and in 1990, Marlow's top ten customers rated the quality of the company's thermoelectric coolers at 100 percent.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Marlow Industries' web site includes a copy of the company's MBNQA Standard Overview. But, the Standard Overview does not provide detailed information and based on the failure of Marlow to provide information to me, it would appear that the company does not make available detailed information on how the organization was able to change its culture and achieve eminence.

Company: **Solectron**

Year of Award: **1991**

Award Category: **Manufacturing**

COMPANY PROFILE

Solectron provides electronics companies with customized manufacturing and assembly services. The company, specializes in products and services for printed circuit boards and computer subsystems. It was founded in 1977, is headquartered in Milpitas, California, and has worldwide operations. In 1991 Solectron had approximately 2,100 employees (Solectron).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *Solectron*. This is a six page corporate overview.

(4) Reprints of five articles on various topics related to the company's quality programs, or the growth of the company.

(5) *Solectron Beliefs.* This is a four page sales brochure describing values related to Solectron's manufacturing services.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

In 1980, under the leadership of Dr. Chen (who later became the President and then the Chairman of Solectron), Solectron introduced quality circles. In 1981, Dr. Chen started what is called Solectron University, where he personally taught classes on quality techniques to all employees, and leadership training to the management team. Chen's teachings were based on the practices borrowed from Japanese companies and included: just-in-time supplier relations, Total Quality Control, statistical process control, continuous flow manufacturing, and *Kaizen* (Solectron).

Solectron applied unsuccessfully for the MBNQA in 1989 and 1990. In 1991, however, it applied and won. The company used the feedback that it received from the MBNQA examiners in 1989 and 1990 to improve many of the company's processes; and in 1989 instituted an internal MBNQA-like award, which is awarded annually to Solectron sites that meet the MBNQA criteria (Solectron).

Solectron's use of computers to gather extensive data to continually measure and control many facets of its business including: customer satisfaction, quality of processes, and the quality of the performance of its supplier. Its measures are calculated in parts per million, which is consistent with its goal to achieve Six Sigma quality in all manufacturing and production processes. All processes at Solectron are benchmarked against world-class leaders (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Quality improvement programs have been driven by senior management throughout Solectron's history. One member of the executive team takes the lead in overseeing the company's quality and productivity improvement teams. On a regular basis, this responsibility is rotated between the members of senior management. The company also uses executive – employee roundtables to provide management with the opportunity to promote leadership in quality improvement.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

Statistical process control is a staple at Solectron, and is used to reduce costs and improve the quality of the company's manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Solectron's corporate beliefs state that "the customer is our first priority, and it is our constant objective to satisfy customer requirements on time with unmatched quality" (Solectron Beliefs). The processes that Solectron has implemented to support this are numerous and extensive, and include a multi-faceted research and analysis process and the involvement of customer related criteria in the entire product development process.

Solectron monitors its customer satisfaction index (CSI) daily. The company characterizes its grading as being on a severe scale. When the severity grading for any customer falls below ninety seven percent, the company initiates immediate corrective action.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All personnel at Solectron are trained and involved in its quality management practices. Solectron University provides the forum for ongoing training in quality management for all levels of personnel. The president of the company has played a leading role in the development and implementation of Solectron's quality management training programs.

5. **Apply and promote worker involvement in quality improvement programs.**

Management ensures that every worker at every level is involved in improving quality. For example, Solectron line workers have responsibility for maintaining quality measures and control charts. Also, the company's executive – employee roundtables encourage the active participation of all employees in the quality improvement process.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Solectron has demonstrated significant improvements in the quality of goods and services. From 1986 to 1991, the company's return on assets increased from 5.3% to 8.2%; return on equity increased from 11.1% to

22.2%; inventory turnover increased from 4.8 to 7.5; supplier's on-time delivery increased from 70% to 95%; defect levels decreased from 450 ppm to less than 50 ppm; and customer product returns decreased from 2% to less than .5% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The information provided by Solectron is detailed and comprehensive. It is in a form that could be used by United States organizations to help them change their culture and achieve eminence.

Company Name: **Zytec Corporation**

Year of Award: **1991**

Award Category: **Manufacturing**

COMPANY PROFILE

Zytec was founded in 1984. The company designs and manufactures electronic power supplies, and repairs power supplies and CRT monitors. Most of the company's customers are in the United States, however, its competitors include manufacturers from Europe and the Far East. The company is headquartered in Eden Prairie, MN. Zytec is an employee–owned company. In 1991, the company had a total of 800 employees at its headquarters and at its principal manufacturing facility in Minnesota (Application Summary).

Since it was founded, Zytec has focused on providing quality products and services, it has used Deming's 14 points as its cornerstone, and has as its moto the words "Quality, Service, and Value" (Application Summary, p. 1). These words are also on every employee's badge.

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *Zytec...Serving your Multinational Needs with our Multinational Resources.* This is a thirty three page corporate overview in a presentation style format.

(4) A copy of a presentation describing the processes Zytec executed in its efforts to win the MBNQA.

(5) *Guidelines to Zytec Values.* This is a pocket summary, describing in detail Zytec's fundamental values.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Zytec's quality management program is driven by Deming's 14 Points for management. Deming's 14 points are listed on either the front or back cover of every piece of documentation provided by the company, and are constantly referred to by the company in its documentation to describe the rationale for the company's quality practices and processes.

In 1988, the company's CEO and Vice President of Marketing studied total

quality control methods used in Japan. The result of this study was the implementation, in 1988, of a process that Zytec calls Management by Planning (MBP). MBP drives the company's strategic planning process, which is designed to ensure active corporate wide participation in the company's quality programs (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Zytec management provides leadership in the development and implementation of the company's quality programs. Management drives the development of strategic objectives, and plays an active role in the coordination and execution of objectives. Management is also actively involved in training employees in the fundamental principles of Zytec's quality programs.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

   Statistical process control is used to reduce the cost and improve the quality of Zytec's manufactured products. Several other methods are

used to reduce costs and improve the quality of Zytec's non-manufacturing processes.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Zytec characterized themselves as being data driven. The company states, however, that its most valuable data are customer related. The company has eighteen different processes that are used to collect customer data. These processes include: external market research studies, customer surveys, customer interviews, customer focus groups, customer visits, and supplier input and participation. The data developed through these processes is used to determine customer requirements and expectations, to develop new product designs, and to continually improve products, processes, and services.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All personnel, at all levels, receive quality training. In 1990, each employee took, on average, 2.7 quality related courses.

5. **Apply and promote worker involvement in quality improvement programs.**

Deming's 14th Point, and Zytec's MBP process, ensure that all workers are involved in the company's quality improvement programs. Deming's 14th point states: "Put everybody in the company to work to accomplish that transformation. The transformation is everybody's job" (Deming, 1982. p. 24). Zytec's MBP process ensures that all employees are participants in the development and execution of plans that will achieve the company's objectives for quality.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

Zytec has demonstrated significant improvements in the quality of goods and services. From 1988 to 1990: the company experienced a 50% increase in manufacturing yield, a 26% decrease in cycle time, a 50% decrease in design time, and a 30-40% decrease in product manufacturing costs; total warranty costs decreased 36%; customer rated product quality improved from 99.7% to 99%; sales per employee grew 15% annually on a compound basis; inventory turns increased 128%; and product reliability improved 10 fold. From 1984 to 1990, OEM revenue grew 74% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Zytec produces and makes available to other United States organizations detailed information on how it was able to achieve eminence. Because Zytec's basic operating principles were founded on quality, and specifically Deming's 14 Points, the company did not need to change its culture to achieve eminence.

Company Name: **AT&T Network Systems Group: Transmission Systems Business Unit**

Year of Award: **1992**

Award Category: **Manufacturing**

COMPANY PROFILE

From 1955 to 1989, Transmission Systems Business Unit (TSBU) was a division of AT&T. In 1989 TSBU became a business unit within AT&T's Network Systems Group. TSBU manufactured and marketed systems for transporting data, voice, and images over a variety of public and private network systems and technologies. In 1992, TSBU was headquartered in Morristown, N.J. It had 7,500 employees in nine states, and another 3,000 employees in Europe (Standard Overview).

In 1996, TSBU was spun-off from the Network Systems Group. It was combined with Bell Laboratories, and some other AT&T equipment business units, to form a separate corporation: Lucent Technologies (Cover Letter).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *Lucent Technologies: facts*. This is a pocket summary providing an overview of Lucent Technologies: its history, products, and leadership team members.

(3) A corporate overview presentation of quality practices at Lucent Technologies.

(4) A general presentation on policy deployment.

(5) A cover letter explaining the spin-off of AT&T-TSBU.

The following assessment is based solely on the Standard Overview, which is specific to TSBU, and to the situation and events that resulted in TSBU winning the MBNQA in 1992. The other documentation provided by the company was not used in the assessment, because it relates to Lucent Technologies. Although TSBU is now a division of Lucent Technologies, this was not the case in 1992, when TSBU won the MBNQA. Also, in terms of number of employees, TSBU is only one tenth the size of Lucent Technologies, and Lucent Technologies has a much broader range of products and services than does TSBU.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

TSBU's planning process, which the company called the policy deployment process, was a central element in TSBU's approach to quality. TSBU's policy deployment process provided for an iterative process that linked quality principles to the defined annual business objectives. In 1992, the deployment process used more than 800 teams to carry out the company's objectives. TSBU also focused on training, and on gaining support for the policy deployment process from union leaders.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   TSBU executives, led by the President of TSBU, formed the Quality Council. This Quality Council was responsible for both initiating and deploying the company's plans for quality improvement programs.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

   There is no reference to the use of statistical process control to reduce the

cost and improve the quality of manufactured products. The Standard Overview does, however, reference the use of automated data collection processes, which are used to control the effectiveness of production processes.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

TSBU's goal was to exceed its customer's expectations. The company used a variety of methods to collect and analyze data, for the purpose of continually improving its customer's satisfaction with its performance.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All TSBU employees, at all levels, participated in the company's customer focused Quality Orientation Program. Trainers were also available, on an ongoing basis, to assist employees to develop skills that would improve the quality of their work.

5. **Apply and promote worker involvement in quality improvement programs.**

Encouraging worker involvement was a key element of TSBU's quality improvement efforts. In 1991, 79% of employees were members of

quality improvement teams.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

The use of quality management practices by TSBU resulted in improvements in the quality of its goods and services. However, it is not clear from the Standard Overview if these improvements were significant. From 1989 to 1991, TSBU reduced new product development time by 50%; and from 1987 to 1991, it increased its international customers by 37.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Because, with the exception of the Standard Overview, all of the information provided related to the policies and practices of Lucent Technologies, the TSBU specific information was not sufficient to illustrate to other United States organizations how the company was able to change its culture and achieve eminence. Also, even the Lucent Technologies materials were not sufficiently detailed to be useful to another United States organization that is interested in changing its culture and achieving eminence.

Company Name: **AT&T Universal Card Services**

Year of Award: **1992**

Award Category: **Service**

COMPANY PROFILE

AT&T Universal Card Services (UCS) was established in March of 1990, as the credit card division of AT&T. The purpose of the company was to maintain and increase the use of AT&T's long distance services. Within two years, UCS had become the credit card company with the second largest number of subscribers. UCS is headquartered in Jacksonville, Florida. In 1992, UCS had 2,500 employees (Application Summary).

The quality program and the UCS quality quest was begun in 1990, shortly after the company was created. The design of UCS's quality program was based on the MBNQA concepts and criteria (Application Summary).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of UCS's MBNQA application.

(3) *AT&T Universal Card Services: Getting it Right from the Start.* This is a six page overview of UCS quality practices.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

UCS uses the MBNQA criteria to assess its performance. The core of the company's quality program, however, is the very strong implementation of the three fundamental tenets of Total Quality Management: continuous improvement, employee empowerment, and market orientation (Getting it Right).

UCS has identified eight categories, which the company calls "satisfiers," that are used by the company to guide the focus of its quality improvement programs. Satisfiers are designated as part of the annual strategic planning process. Employee objectives and reward programs are linked to the satisfiers (Application Summary).

Data relating to each of the satisfiers is collected and analyzed, on a daily basis, using advanced information technology. The results feed corrective feedback mechanisms, which ensure a high level of quality in the execution of UCS's quality programs (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The executive team at UCS drives the development of the company's annual quality objectives. The company's executives and managers are also the owners of many specific short and long term quality goals. The executives and managers regularly meet with employees, to exchange ideas on how the employees can meet their quality goals.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve quality of manufactured products.**

   UCS uses extensive data collection and analysis processes to reduce costs and improve quality. Although there is no reference to the use of

statistical process control, *per se*, the company does note that pareto analysis is used to facilitate root cause analysis (Application Summary).

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Since UCS's inception, the company has recognized that its success is dependent on its customer focus; and the company's quality processes have been structured to be customer oriented. These processes include the daily, weekly, and monthly monitoring, reporting, and reviewing of customer satisfaction metrics, which provide the foundation for ongoing improvements in the services that UCS provides to its customers.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   All levels of personnel at UCS are trained in quality management practices. Employee surveys are routinely conducted by the company to determine if additional training is needed.

5. **Apply and promote worker involvement in quality improvement programs.**

Worker involvement in UCS's quality improvement programs is actively promoted and reinforced through the use of recognition programs.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Because UCS has used MBNQA concepts and criteria since it began operations, in 1990, there are no before-and-after comparative data that can be used to determine if use of its quality management practices has resulted in significant improvements in the quality of the company's services. The company has, however, achieved very high levels of quality in its services compared to other companies in the same industry, and these improvements could be attributed to the sustained use by UCS of quality management practices. UCS leads the credit card industry in speed and accuracy for processing applications, and in customer satisfaction — 98% of its customers rate the company's service better than the competition.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Because UCS used MBNQA concepts and criteria from inception, the company did not need to change its culture to achieve eminence. UCS does, however, provide detailed information on its quality processes, which allowed it to achieve eminence, and which could be used by other United States organizations.

Company Name: **Granite Rock**

Year of Award: **1992**

Award Category: **Small Business**

COMPANY PROFILE

Granite Rock was founded in 1900. It is located in Watsonville, California. Its principle products are rock, sand, gravel, ready mix concrete, and asphalt. The company's history of successful operations has survived the Great Depression, two world wars, and the 1989 San Francisco Earthquake. In 1992, Granite Rock had 386 employees (Granite Rock Company).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *The Practice of TQM.* This is a reprint of an interview with the company's CEO, Bruce Woolpert, which was published in the July 1994 issue of

Constructor.

(3) *Learning the Meaning of Measurement.* This is a reprint of an article by Michael Barrier, from the August 1994 issue of Nations Business.

(4) *Granite Rock Company.* This is a historical overview of the company and its operations.

(5) *Granite Rock Company: Corporate Objectives.* This is a one page overview of the company's corporate objectives.

(6) A form for ordering information. The items listed on this order form include a summary of the company's MBNQA application, for which there is a $35.00 charge.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Granite Rock began its quality improvement program in 1985. The cornerstone of the program is the company nine complementing corporate objectives. These are: (1) customer satisfaction and service, (2) safety, (3) production efficiency, (4) financial performance and growth, (5) community commitment, (6) management, (7) profit, (8) product quality assurance, and (9) people (Granite Rock Company: Corporate Objectives).

The company has three practices that drive its quality improvement efforts. These are: (1) empowering its customers to complain, (2) a commitment to

lifelong learning for employees, and (3) giving ownership to employees for executing and improving the performance of their job. Granite also makes extensive use of advanced technology to control its mining and manufacturing processes (The Practice of TQM).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Executive management leads the development and implementation of quality improvement programs, which are targeted toward specific areas for improvement.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Granite makes extensive use of statistical process control to reduce the cost and improve the quality of its products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Granite promotes the concept and practice of customer orientation. The

company regularly conducts customer surveys to determine areas of focus for improving customer satisfaction. The following are two relatively unique policies that illustrate the company's commitment to customer orientation: (1) the company implemented a company wide change, which mandates that employees must answer "yes" to customer's special requests; and (2) the company implemented a policy, called the "Granite Rock Short Pay Method," where customers do not pay for any product or service with which they are not completely satisfied. The process a customer uses to exercise this option, is simply to take its Granite invoice and scratch off the item that was considered to be unsatisfactory (The Practice of TQM, p. 3).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Granite states that it is committed to life long learning for its employees, and has training programs that address the fact that employee skill needs vary with the age of the employee. The company provides an average of thirty seven hours of training per employee, which is thirteen times the construction industry average. Many Granite employees are trained in quality management practices.

5. **Apply and promote worker involvement in quality improvement programs.**

Worker involvement is encouraged, and there is almost 100% employee involvement on the company's more that 100 quality teams.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Granite has demonstrated improvements in the quality of its goods and services. From 1986 to 1991, Granite's market share increased 88%; and from 1988 to 1991, customer satisfaction increased from 70% to 93.5%. Productivity per employee has increased and, in 1991, it was 30% above the industry average (Standard Overview; The Practice of TQM).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Granite makes available a limited amount of information, at no charge. This information does not provide details on how Granite was able to change its culture and achieve eminence, and does not provide data that other United States organizations could use to change their culture and achieve eminence.

Granite also makes available additional information, including a summary of its MBNQA application, for a charge of $35.00. I am unable to evaluate if this additional information provides details on how Granite was able to change its culture and achieve eminence, and if this additional data could be used by other United States organizations to change their culture and achieve eminence, because I did not order this for-fee material. My reason was that, to maintain some degree of sample consistency, I used the same data collection process for all companies.

Company Name: **The Ritz Carlton Hotel Company**

Year of Award: **1992**

Award Category: **Service**

COMPANY PROFILE

The Ritz Carlton Hotel Company is a management company that develops and operates luxury hotels on behalf of W.B. Johnson Properties. Ritz Carlton hotels have existed for 100 years and have always been associated with quality (Application Summary). In 1983, W. B. Johnson Properties acquired exclusive rights to use the Ritz Carlton name. The Ritz Carlton Hotel Company and W.B. Johnson Properties are both headquartered in Atlanta, GA. In 1992 Ritz Carlton operated thirty one hotels (twenty four in the United States and seven overseas) and had 14,000 employees (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the MBNQA application.

(3) *The Ritz Carlton: Using Information Systems to Better Serve the Customers*. This is a reprint of an article by Norman Klein, W. E. Sasser, and T.O. Jones, which was published in the December 8, 1994 issue of the Harvard Business Review.

(4) *The Ritz Carlton Mission Statement*. This is a one page document.

(5) *MBNQA Frequently Asked Questions and Answers*. This is a one page write-up.

(6) *The Ritz-Carlton Quality Visits*. Provides the details on how to arrange a visit to the company.

(7) *The Ritz-Carlton Basics*. This is a wallet sized copy of The Ritz Carlton's basic rules of behavior, or "credo," and the company's three steps of service.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Ritz Carlton's business plan is also its quality plan. The Ritz Carlton uses information technology extensively to meet the goals of its comprehensive

service quality program, which has built its foundation on providing personalized service. The goal of this service is to anticipate and fulfill customer needs (The Ritz Carlton, Using Information).

The company also uses what it calls Gold Standards, which are key to its service quality program. The Gold Standards define the rules of attitude and behavior that apply to all Ritz Carlton employees. These rules address customer service, and insist "upon 100% compliance to customer's requirements" (Application Summary, p. 4). The Gold Standards are taught by the company's senior management to employees, during employee orientation. Each employee must be certified in the Gold Standards before he or she begins actual service (Application Summary).

The Ritz Carlton focuses on employing the hotel industry's best practices. The company accomplishes this through the ongoing collection of performance data, and the use of best practices comparisons (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Senior management provides leadership in the implementation of the company's quality improvement programs. This is first demonstrated in their seven day countdown, when senior management works along side new employees during their first week of employment. Senior management leadership continues with their active daily participation in quality improvement programs.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Information technology is used extensively to monitor and report on many measures of quality. There is no reference by the company, however, to the use of statistical process control.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   There is only one orientation at The Ritz Carlton, and that is customer orientation. The company's Gold Standards insist "upon 100%

compliance to customer's requirements" (Application Summary, p. 4).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   All personnel, at all levels, are trained in the company's quality management practices.

5. **Apply and promote worker involvement in quality improvement programs.**

   All employees are involved in the company's quality improvement programs. Teams are an integral part of the Ritz Carlton's quality improvement program. Members of teams are given responsibility for developing and implementing plans to improve productivity and quality in designated areas of the company. Executives involvement is also extensive, on average executives spend twenty five percent of their time on quality related matters.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

   The Ritz Carlton has demonstrated significant improvements in the quality of goods and services. In 1991 the company was the recipient of 121

quality related awards and it was awarded the highest rating by three major hotel rating organizations. From 1989 to 1991, incoming delivery from suppliers improved from 60% to 100%, employee turnover decreased from 47% to 16%, there was a 12% reduction in the amount of staff required per guest room, profit and revenue per guest room continued to increase, customer complaints dropped by 27%, and customer retention rates increased by 29% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The company provides detailed information on how it was able to achieve eminence, however, The extent to which The Ritz Carlton's quality management practices could be useful to other United States companies is probably limited. This is because The Ritz Carlton already had a reputation that was synonymous with quality; because the company built on, rather than changed, its existing culture; and because The Ritz Carlton's practices are specific to the luxury segment of the hotel industry — and are probably not applicable to other industries.

Company: **Texas Instruments, Defense Systems and Electronics Group**

Year of Award: **1992**

Award Category: **Manufacturing**

COMPANY PROFILE

Texas Instruments, Defense Systems and Electronics Group (TI-DS&EG) designs and develops precision guided weapons, radar systems, infrared vision equipment, and electronic warfare systems. In 1991 TI-DS&EG had approximately 15,000 employees (Standard Overview).

TI-DS&EG began its quality journey in 1982. The company's journey has included implementing quality management practices promoted by Juran, Crosby, and Deming. In 1989, the company adopted the MBNQA criteria as the basis for its Total Quality Management framework (Questions & Answers).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of TI-DS&EG's MBNQA application.

(3) *Questions & Answers: Our Quality Journey.* This is an eighteen page booklet that poses and answers general questions about the MBNQA, and general questions about TI-DS&EG's preparation for the award. It also discusses why winning the award is important for the future of the company.

(4) *Texas Instruments Total Quality.* This is an eight page brochure describing the key components of the company's Total Quality strategy.

(5) A pocket summary card, which summarizes TI-DS&EG's Total Quality Strategy.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

TI-DS&EG has integrated the principle tenets of Total Quality Management (employee empowerment, continuous improvement, and market orientation) into all of its processes and practices (Texas Instruments Total Quality).

TI-DS&EG uses what the company calls stretch goals. In 1991 it set two stretch goals: (1) to achieve Six Sigma quality in its defect rate, and also in all administrative, business, and support processes; and (2) to reduce cycle time by twenty five percent. Achieving these goals has been facilitated by the company's active benchmarking program, where performance is measured against the best in the world. "TI-DS&EG is recognized for having one of the best benchmarking programs in the industry" (Texas Instruments: Total Quality, p. 4).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Management is responsible for ensuring that every employee fully understands the company's objective of customer satisfaction through total quality. The Chairman of Texas Instruments, Jerry Junkins, and the President of TI-DS&EG, Hank Hayes, were ardent proponents and drivers of the company's Total Quality programs. This is supported by the numerous quotes, which are attributed to Junkins and Hayes, throughout the company's documents.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

TI-DS&EG's use of statistical process control is extensive, and has played a significant role in reducing costs and improving the quality of its products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

TI-DS&EG states that it has only one objective—"Customer Satisfaction through Total Quality" (Texas Instruments: Total Quality). They believe the best source of gauging customer satisfaction is through personal contact. The company uses personal contact programs to develop customer satisfaction data, including one where the senior management team collectively contacts over 1,000 customers annually to obtain feedback on their satisfaction. Feedback is not limited, however, to the company's personal contact programs. The evaluation of customer needs is carried out through several other forms, which include surveys, requirements documents, informal interviews, and customer contracts. The information from all of these sources drives the product planning and customer satisfaction improvement processes.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

The entire workforce is trained in design quality, statistical tools, and other quantitative tools that are used to measure performance. Each employee also has a customized training and education plan. These plans focus on job skills needed to accomplish professional objectives and organizational objectives which are total quality objectives.

5. **Apply and promote worker involvement in quality improvement programs.**

The programs and processes in place at TI-DS&EG are driven by management, which is responsible for ensuring that every employee is involved in the company's pervasive quality improvement practices.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

TI-DS&EG has demonstrated improvements in the quality of the company's goods and services. From 1987 to 1992, the number of customer initiated quality audits decreased by 72%. From 1988 to 1992, customer complaints decreased by 62%. From 1987 to 1991, average revenue per employee increased from $80,000 to $125,000 (Standard

Overview; Application Summary).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The information provided by TI-DS&EG on its total quality program, and how it was able to win the MBNQA, provides specific guidance that could be used by another organization interested in changing its culture and achieving eminence. The company also provided a booklet of information on the MBNQA award program, which included an endorsement of the program.

Company Name: **Ames Rubber Corporation**

Year of Award: **1993**

Award Category: **Small Business**

COMPANY PROFILE

Ames Rubber was founded in 1949. The company develops, manufactures, and markets rubber rollers and toner for use in office machines. These products are designed to meet the specific requirements of each customer. The company is based in Hamburg, N.J., where it has four locations. The company has 445 employees (Standard Overview).

In the mid 1980s, increased foreign and domestic competition resulted in customer pressure to reduce costs and increase quality. This provided the motivation, in 1987, for the Ames Executive Team to develop and implement a company wide process called Excellence Through Total Quality (Application Summary). As a supplier to Xerox, Ames decided to use Xerox as its quality strategy role model. Xerox helped Ames executives to design the company's

total quality strategy, and assisted the company with its quality management training (The Total Quality Process).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *The Total Quality Process at Ames Rubber Corporation.* This is a four page overview of the principal components of Ames total quality management process.

(4) A press release, which announces Ames's winning the MBNQA.

(5) *The Ames Quality Pledge.* This is a wallet sized card.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Ames's Excellence Through Total Quality process was developed to ensure that the company delivers full satisfaction to all of its internal and external customers. The process involves all of Ames' employees (called Teammates). A key element of the process is Continuous Supplier and Customer Involvement (CS/CI), which is a "closed-loop communication system" (Application Summary, p. 10). This system was developed specifically to address the satisfaction of

external customers, and involves the customer in every step of the development of a new product (Application Summary).

One other significant measure taken by Ames relates to their suppliers. Following a review of the quality of the products and services obtained from suppliers, the company reduced its number of suppliers by half; focused on developing true partnerships; and worked with its partner-suppliers to continually improve the quality of the products and services they supply to Ames (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Ames' managers are expected to continually espouse and practice the principles of the company's total quality management processes, and are responsible for ensuring that workers are fully involved in improving quality. Senior executives work with employees, from all levels within the organization, and take an active role in the company's Quality Improvement Teams and problem solving processes.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

Ames uses statistical process control, as well as many other measurement, tracking, and feedback systems, to reduce the cost and improve the quality of the company's manufactured products. Ames also uses statistical process control to reduce the cost and improve the quality of services performed throughout the organization.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Ames goal is to meet or exceed all internal and external customer requirements. Data on internal customer requirements is collected from surveys, feedback from training, and "Involvement Groups." Data on external customer satisfaction is regularly collected using surveys, audits, interviews, purchase contracts, and market studies. Analysis of the data from both of these groups is converted to objectives, and is incorporated into the company's strategic business plan. The customer service group benchmarks its performance in the areas of reliability, responsiveness, effectiveness, courtesy, accuracy, delivery and response time.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Every employee, at every level, is given a minimum of twenty four hours of Total Quality training. Executives receive additional training.

5. **Apply and promote worker involvement in quality improvement programs.**

Every Ames' employee is a member of an Involvement Group. These groups are the key building blocks for increasing employee involvement in Ames' quality management processes. Employee involvement is encouraged through the use of extensive recognition programs.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

Ames has demonstrated significant improvements in the quality of goods and services. From 1989 to 1993, the parts per million defective, to customers, was lowered from 30,000 to under 10; on time delivery increased from 81% to 98.6%; first pass yields increased from 85.3% to 93.7%; lost time from accidents per 100 employees was reduced from 13.4 to 4.6; and supplier component performance quality increased from 93.1% to 98.9%. Repeat orders have increased 60%, and there have

been reductions in labor and material costs, and reductions in cycle time (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Ames provides detailed information that could be used by other United States organizations to change their culture and achieve eminence.

Company Name: **Eastman Chemical Company**

Year of Award: **1993**

Award Category: **Manufacturing**

COMPANY PROFILE

Eastman Chemical Company (ECC) is a division of Eastman Kodak. ECC manufactures approximately 400 chemical products, which it markets in more than 80 countries. The company was founded in 1920, and is headquartered in Kingsport, TN. It has approximately 18,000 employees (Momentum to Change).

ECC began its quality journey in the 1970s, with the objective of reversing its declining market share. The implementation of the company's quality improvement program resulted an almost immediate and dramatic improvement in its market share — and in productivity. These dramatic improvements motivated the company to fully embrace a quality policy that would drive all of ECC's operations (Quality Journey).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *Momentum to Change*. This is a sixteen page corporate and product overview.

(3) *To Be The Best*. This is a twenty four page glossy brochure that highlights ECC's quality initiatives.

(4) *Eastman Chemical Company: Quality Journey*. This is a thee page brochure that describes the history of quality at Eastman Chemical Company.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

The ECC vision for quality excellence is summarized in its quality policy statement: "To be the leader in quality and value of products and services" (To Be the Best, p. 8).

ECC uses its strategic partnerships between customers, employees, and suppliers to achieve the objectives of its annually updated quality initiatives. The company's supplier program which teams ECC employees with key suppliers, "was named by Purchasing Magazine as one of the 10 most copied supplier

relations processes in U.S. industry" (Standard Overview, p. 2).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Senior management each year updates the company's quality initiatives by developing annual objectives. Members of the senior management team are encouraged to work alongside employees to achieve these annual objectives. Senior management also provides leadership through ECC's "interlocking team structure," which includes involvement by all employees in functional teams (Quality Journey).

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   ECC makes extensive use of statistical process control to reduce the cost and improve the quality of its manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for manufactured products and services.**

ECC's Quality Management Policy begins and ends with customer input and feedback, and provides processes that are customer focused. The company's objective is to exceed customer expectations.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Everyone at ECC receives quality training. This training includes quality related statistics, team skills, and problem solving.

5. **Apply and promote worker involvement in quality improvement programs.**

All levels of ECC employees are involved in the company's quality management practices.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

ECC has demonstrated significant improvements in the quality of goods and services. From 1990 to 1993, ECC reduced its time-to-market for

new products by 50%. For the period 1989 through 1993, more than 70% of ECC's customers rated the company their number one supplier, and shipping reliability was close to 100%. For the period 1982 through 1993, ECC received ninety seven quality related awards from its customers (Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The form of the information provided was high quality, however, the materials do not detail the specifics of ECC's quality management practices. The greatest amount of detail is contained in their *To Be The Best* brochure where the "four foundation documents" describing ECC's commitment to quality are found: The four foundation documents are: Strategic Intent, which is a statement defining ECC's vision and mission; Quality Policy, which describes the goals and principles of its quality policy; The Eastman Way, which describes the culture at ECC; and Responsible Care, which documents a commitment by ECC to employee health, safety, and environmental responsibility. All four foundation documents are provocative — but do not detail how ECC was able to change its culture and achieve eminence.

Company: **AT&T, Consumer Communications Services**

Year of Award: **1994**

Award Category: **Service**

COMPANY PROFILE

AT&T-Consumer Communication Services (CCS) has approximately 60% of the United States long distance telephone communications market (measured in calling minutes of use). The company has approximately 80 million customers, handles an average of 185 million calls per day, and answers an average of four million customer inquiries a day. It is headquartered in Basking Ridge, N.J., and has more than 900 offices worldwide. AT&T-CCS has approximately 44,000 employees (A Profile).

AT&T began testing and inspecting telephone apparatus in 1877, which allows the company to claim it was the first company to develop and use formal quality methods. However AT&T (then known as Western Electric), is more widely

recognized for the work of Walter Shewhart, known for his development and implementation of statistical methods of quality control. These methods were used and made popular by W. Edwards Deming, often called the father of quality control. It was also AT&T that published the first handbook of statistical quality control, which is still widely used (A Profile).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of AT&T-CCS's MBNQA application. This was provided in both glossy and flat paper forms. The content was nearly identical.

(3) A fold over catalog that describes the offerings of the AT&T Quality Library.

(4) *Quality: Vision Values Commitment.* This is a flyer that describes the history of quality at AT&T.

(5) A Profile: AT&T Consumer Communication Services. This is a flyer that provides an overview of AT&T-CCS.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Because statistical quality control was invented at AT&T, the company has the longest history of practicing formally recognized quality management methods. That notwithstanding, in 1988 the president of AT&T, Bob Allen, decided that the company needed to review and reinvent its quality management processes, and that the company needed to renew its commitment to total quality management (Quality: Vision).

The result of this renewed commitment to total quality management was a new AT&T quality management model that incorporated criteria from the MBNQA and from AT&T's Total Quality Assurance system. The central element of this model was a strategic planning process that identified and quantified market opportunities, identified and measured the intended outputs, and developed and deployed plans to drive the successful execution of strategic initiatives.

Under the new AT&T model, strategic plans are tightly integrated with the company's human resource plans. Human resource plans are developed for the short and long term, and are designed to ensure that employees are adequately trained, empowered, recognized, and compensated. AT&T uses three metrics to track employee performance. These are: Customer Value Added (CVA), People Value Added (PVA), and Economic Value Added (EVA). These metrics are used

to allow the company to track and achieve its customer, employee, and investor satisfaction goals (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The executive team provides leadership of the company's quality improvement programs, by constantly reminding employees that AT&T is driven by four guiding practices: customer focus, vision, values, and quality.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   AT&T-CCS cites numerous measures that are tracked and analyzed. However, there is no specific reference in the documents to the use of statistical process control tools or techniques.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   CCS believes that satisfying customers is fundamental to the success of its business, and this is reflected in the company's planning, deployment,

measurement and feedback processes. CCS has identified five key customer satisfiers: call quality, consumer service, billing, reputation, and price; and has specifically identified its level of commitment to each of these satisfiers. For example its commitment for customer service is "the best service available anywhere." This service provides dedicated customer service representatives 24 hours a day, seven days a week, and includes foreign language support (Application Summary).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Although there are extensive training programs continually offered to raise employee skill levels, there is no specific reference to quality training for any personnel in the organization.

5. **Apply and promote worker involvement in quality improvement programs.**

The strategic planning deployment process at AT&T, which originates with AT&T-CCS executives, involves personnel at all levels in improving quality. The company applies the dictum: "Not quality with a capital Q, but quality as a way to live" (Application Summary, p. 7).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

AT&T-CCS has demonstrated improvements in the quality of its goods and services. The documents state that its quality management methods have led to better network service, reductions in product development time, improvements in billing accuracy, and improved financial results. These statements, however, are not quantitatively supported. The only significant improvements that are quantitatively supported are: between 1988 and 1994, the company's long distance pricing has decreased more than 30%; and between 1990 and 1993, product development time was reduced by 50% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

AT&T provides a comprehensive package of information on the company and its quality management practices. The information was not sufficiently detailed, however, to be usable by other organizations to change their cultures and achieve eminence.

Company Name: **GTE Directories**

Year of Award: **1994**

Award Category: **Manufacturing**

COMPANY PROFILE

GTE Directories is a wholly owned subsidiary of GTE Corporation. GTE Directories first began operations in 1935, under the company name Tel Ad. As a result of two mergers and one spin-off, the company became GTE Directories Corporation in 1982. In 1994, GTE Directories was one of the world's largest telephone directory companies, publishing more than 1,000 directory titles in 41 states and 14 countries. GTE Directories is headquartered in Dallas-Fort Worth, Texas. In 1994, the company had approximately 5,000 employees (GTE Directories Corporate History).

GTE Directories first implemented its quality program, Zero Errors and Misunderstandings (Z.E.A.M.), in 1970. In 1986, prompted by deregulation and the resulting increased competition, senior management announced a

commitment to quality, and began a formal quality improvement program. In 1991, the company incorporated the MBNQA criteria into its quality assessment and improvement processes (Application Summary).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) Four data sheets: a fact sheet on GTE Directories, an overview of the capabilities of GTE Directories, questions and answers about the GTE Quality Journey, and the company's pursuit of the MBNQA.

(4) Two press releases announcing that the company had won the MBNQA.

(5) *GTE Directories Corporate History.* This is a two page data sheet.

(6) A pocket summary describing the company's supplier quality program.

(7) An overview of, and registration form for, the company's Quality Showcase seminars.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

GTE Directories uses a comprehensive customer satisfaction program, called the Customer Satisfaction Measurement Program, CSMP. The CSMP program

collects and analyzes data on an ongoing basis from numerous sources including written and oral surveys, focus groups, customer complaints, customer purchasing activities, competitive analysis, and benchmarking. Data from the CSMP provides the basis for new product research, for improving the delivery of products and services, and in other ways to meet the company's vision of achieving growth through 100 percent customer satisfaction (Standard Overview; Application Summary).

"Process management is the single most widely used tool for quality improvement at GTE Directories" (Application Summary, p. 13). There are five steps to developing processes at GTE: (1) an analysis of the problem, (2) solicitation and assessment of best practices, (3) solution selection, (4) execution, and (5) follow-up measures. The company's five step process is similar to those used by many MBNQA winners, with one significant difference: GTE Directories analyzes best-practices data to define the results of a process.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The members of the executive management team provide leadership in the development and implementation of the company's quality programs, and serve as role models on matters relating to quality and customer orientation.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Although there are many references to data collection and analysis to improve customer satisfaction, there is no specific mention of the use of statistical process control for this, or any other, purpose.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   GTE Directories is driven by its objective of 100% customer satisfaction. The company's Customer Satisfaction and Measurement Process (CSMP) is key to its ongoing improvement processes, which are designed to achieve this objective.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All levels of personnel at GTE Directories receive training in quality management.

5. **Apply and promote worker involvement in quality improvement programs.**

There is 100% worker involvement in the company's quality improvement teams. An independent benchmarking organization, the Hackett Group, recognized GTE Directories as "best-in-class" in employee empowerment (Application Summary).

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

GTE Directories provided limited data on the results it has achieved through the use of quality management programs. The information provided indicates, however, that the company has sustained increasing revenue growth, increased customer satisfaction, contained and reduced costs, and increased efficiency in the area of billing and remittance (Application Summary).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

GTE Directories makes available a lot of information, but the level of detail is limited and the content is probably not of significant value to other United States organizations that are interested in changing their culture and achieving eminence. GTE offers, however, to share the lessons it has learned from its quality journey, by responding to telephone inquiries (Application Summary).

Company Name: **Wainwright Industries**

Year of Award: **1994**

Award Category: **Small Business**

COMPANY PROFILE

Wainwright Industries was founded in 1947. It is a privately held contract manufacturer that specializes in metal stamping, assembly, and technical services. The company's customers are located throughout North America. Wainwright is headquartered in St. Peters, Missouri. In 1994 the company had 275 employees (Standard Overview).

Wainwright Industries became serious about measuring performance in 1985. But it was not until 1991, (when the company's president, Nelson Wainwright, announced his commitment to quality management) that quality management was fully integrated into the way the company did business (Wainwright Industries (A), 1996).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) Reprints of articles from St. Louis Commerce, Redesigning Customer Service, Quality Progress, Occupational Hazards, and Industry Week. All of these articles relate to the company winning the MBNQA.

(4) Two Harvard Business Review Case Studies: (1) Wainwright Industries A: Beyond the Baldrige, N. Klein and R. M. Kanter, February 14, 1996; and (2) Wainwright Industries B: The Customer Challenge, N. Klein and R. M. Kanter, February 2, 1996.

(5) An invitation to attend a seminar, which describes some of the key quality management processes used by Wainwright.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Wainwright uses five strategic categories of focus to manage its continuous quality improvement efforts. These five categories are: (1) safety, (2) internal customer satisfaction, (3) external customer satisfaction, (4) six sigma quality and, (5) business performance. On an ongoing basis, data is collected and reported, for all five categories. This data is used to help identify areas that

should be targeted for improvement. Individual employee objectives, and the appraisal process, are linked to progress made in the company's five strategic categories (Application Summary).

The daily active involvement of employees (whom the company calls associates) is considered to be fundamental to the success of Wainwright's quality improvement programs. For the year 1993, each employee, on average, implemented 54.7 new process improvements (Standard Overview).

Wainwright regularly reviews performance on key metrics, which have been defined for all operational areas, and benchmarks the company's performance against other companies that have won the MBNQA (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Senior leadership is active in the development and implementation of quality improvement programs. Senior leadership is always available for advice and discussion with any employee.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

Statistical process control is used to reduce the cost and improve the quality of the company's manufactured products. All employees are trained in statistical process control, and are required to attend an annual refresher course.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Customer satisfaction drives Wainwright's quality improvement programs. The company places equal emphasis on the satisfaction of both internal and external customers. The company believes that high levels of internal customer satisfaction is the key to external customer satisfaction.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All levels of personnel are trained in quality management practices. Quality training begins on the first day of employment, and continues on an ongoing basis. Employee performance levels are monitored. If levels fall below a defined threshold, additional training is provided. Wainwright spends more than twice the industry average (7% of payroll annually) on employee training (Application Summary).

5. **Apply and promote worker involvement in quality improvement programs.**

One of the cornerstones of Wainwright's successful quality improvement programs is the active involvement of its employees. There is 100% employee participation. Senior leadership plays an important role in promoting and ensuring worker involvement.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

Wainwright has demonstrated significant improvements in the quality of goods and services. From 1991 to 1994, internal customer satisfaction increased from 82% to 95%, lost work days due to accidents decreased 87%, cost to produce products decreased 35%, production lead times were reduced 99.88% from 8.75 days to 15 minutes, parts per million defects decreased from 8249 to 781, on time delivery increased from 76% to 98%, cost of defects was reduced from $92,599 to $13,041, and equipment utilization increased from 55% to 75% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Wainwright provides detailed information, which could be used by other United States organizations that are interested in changing their culture and achieving eminence.

Company Name: **Armstrong World Industries' Building Products Operations**

Year of Award: **1995**

Award Category: **Manufacturing**

COMPANY PROFILE

Armstrong World Industries' Building Product Operations (AWI-BPO) is a wholly owned subsidiary of Armstrong World Industries. It is the world's largest manufacturer and marketer of acoustical ceiling systems. The company is located in Lancaster, PA. In 1995, AWI-BPO had 2400 employees (Standard Overview).

The parent company, Armstrong World Industries, was founded by Tom Armstrong in 1860, at a time "when manufacturers worked under the premise of *caveat emptor* . . . Tom Armstrong thought differently. . . . Tom's motto was "Let the buyer's have faith . . . [and] gave all purchasers of his products a written guarantee" (Application Summary, p. 1).

Quality management has been an important part of Armstrong's history. In the 1930s, Armstrong was one of the first companies to install a corporate quality control manager. Keeping up with evolving quality management practices, in 1983 Armstrong instituted Philip Crosby's 14 Steps to Quality Improvement, and in 1990, aided by the MBNQA criteria, Armstrong refined Crosby's steps into Armstrong's 14 Actions. Also in 1990, AWI-BPO moved leadership responsibility for quality away from the quality control group, and into the hands of the highest ranking manager in each of its operations (Application Summary).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *An Introduction to the Business Excellence Process.* This is a twenty four page overview of the elements of Armstrong World Industries quality improvement process.

(4) *Armstrong Today.* This is a four page special edition of the company newspaper, announcing that the company had won the MBNQA.

(5) *People Around the Globe Committed to Excellence in Business.* This is a reference summary card of AWI-BPO's quality processes and principles.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

AWI-BPO's quality management process has four non-negotiable goals: increase market share profitability, be best-cost supplier, increase flow of successful new products, and develop human resource capabilities. The objectives and plans that establish the parameters for the company's short and long term goals, and for achieving its non-negotiable goals, are developed by the Strategic Management Process. AWI-BPO's quality management processes and practices rely heavily on the company's Quality Leadership Team, which focuses on achieving the company's stretch goals by driving the Strategic Management Process; and its quality improvement teams, which focus on the implementation of quality initiatives (Application Summary).

No goals or objectives are set that are not based upon "facts, alternatives and knowledge of the cause and effect relationship between a chosen course of action and the expected results" (Application Summary, p. 7). Fact based management is considered by AWI-BPO to be a principal factor in the company's improved performance. Another principal factor is the company's benchmarking process, which compares AWI-BPO's performance to the performance of the world leaders, and develops and implements plans at AWI-BPO so that it can match or exceed the performance of the best companies (Application Summary).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Management at AWI-BPO is actively involved in developing quality objectives, managing the achievement of those objectives, reviewing performance against objectives, and otherwise serves as the leader of all quality improvement programs. Management provides leadership of the company's quality improvement programs through the Quality Leadership Team (QLT). The QLT is composed of senior management from various operational groups and functional disciplines.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control is used to reduce the cost and improve the quality of manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

All process improvements are driven by customer requirements, which are determined through practices that obtain ongoing feedback from customers. AWI-BPO tracks customer satisfaction through a composite measurement system, which includes data from all of its feedback sources and includes both qualitative and quantitative measures. Gap analysis is used to define and prioritize areas for improvement. The results of the analysis are translated into targets that then become objectives in the Strategic Management Process.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All levels of personnel are trained in quality management. In the annual strategic planning process, each functional group prepares an assessment and develops plans to meet any additional needs for quality training.

5. **Apply and promote worker involvement in quality improvement programs.**

AWI-BPO's Strategic Management Process, combined with the leadership of the Quality Leadership Teams, ensures that personnel at all levels are

involved in the company's quality management programs. At any given time, more than half of the workforce participates on one or more quality improvement teams.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

AWI-BPO has demonstrated significant improvements in the quality of goods and services. In 1994, AWI-BPO reduced its operating costs by $40 million; reduced the number of carriers the company uses for trucking, which resulted in cost savings, reduced the on-time delivery window from 4 hours to 30 minutes, and increased (from 93% to 97.2%) the number of deliveries that meet that window; and increased employee morale. From 1991 to 1995, output per manufacturing employee improved 39%, sales from manufacturing employees improved by 40%, gas consumption decreased 7%, electricity consumption decreased 12%, the cost of quality (a measure of waste from lack of quality) decreased 38%, scrap was reduced 38%, and operating profit increased 250% (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Although Armstrong World Industries was founded on principles of quality, it has repeatedly made significant changes in its quality processes and practices, and in its corporate culture, to achieve eminence. AWI-BPO makes available detailed information that can help other United States organizations to change their culture and achieve eminence.

Company: **Corning Telecommunications Products Division**

Year of Award: **1995**

Award Category: **Manufacturing**

COMPANY PROFILE

Corning Telecommunications Products Division (TPD) is a division of Corning Inc. It was formed in 1983 specifically to manufacture optical fiber, and today is the largest optical fiber manufacturer in the world. The company is headquartered in Corning, N.Y. Corning TPD has 1400 employees, 1200 of whom are at the sole manufacturing facility in Wilmington, N.C. (Standard Overview).

Corning TPD has customers in more than 30 countries. The company classifies its customers into three groups: (1) cable manufacturers; (2) end users; and (3) joint venture partners in Europe and Asia. Its foreign joint venture partners provide Corning TPD with market access in exchange for Corning TPD technology (Application Summary).

Quality has always been part of the Corning TPD's business processes. Corning TPD started on its quality journey ,in 1983, when Chairman James Houghton announced his commitment to quality and founded the Corning Quality Institute. The same year, the company began designing the plans and processes for its first manufacturing facility in Wilmington. Every year since 1983, Corning TPD has increased its levels of sophistication, commitment, and implementation in the application of its quality practices. In 1989, the company first began using the MBNQA criteria as its system for assessing total quality. The company credits the MBNQA criteria and assessment process for building its key leadership, human resources, and management processes (TPD Quality Journey).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *TPD Quality Journey.* This is a six page document that describes the phases and events that comprise the company's quality journey.

(4) *TPD: Our Plan to Win.* This is a nineteen page document that describes seven fundamental areas of quality focus, and that defines the company's ongoing plan for long term success.

(5) *Corning Total Quality Digest.* This is an eighteen page document, which

provides significant details on all elements of the Corning "Total Quality System," including strategies, benchmarking practices, and recorded results.

(6) *Corning: The Battle to Talk with Light.* This is a twenty eight page booklet that chronicles the history of the introduction of optical fiber.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Corning TPD's quality program, which the company calls its "Plan to Win," has seven principal elements. These are: (1) being strategy driven, which is defined as the seamless linking of vision, mission, strategy, plans, goals, business objectives, and employee Management By Objectives; (2) customer focus; (3) a hierarchy of processes to manage the company's business, which starts with a small set of vital processes that are identified by the Executive Leadership Team, and ends with hundreds of sub-processes that support day-to-day operations; (4) continuous improvement of all processes; (5) using the MBNQA criteria to measure the company's progress toward meeting world-class levels of performance; (6) the seamless integration of total quality into all aspects of business; and (7) Corning's three principle values. The deployment of all strategies and processes at Corning TPD rest on three principle values: (i) the continuous improvement of employee satisfaction; (ii) the continual expansion of new and improved processes that are focused on increasing customer

satisfaction; and (iii) the continual investment in core technologies for competitive advantage (Plan to Win).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   The Executive Leadership Team sets the strategic agenda for quality improvement programs.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   There is no specific mention of the use of statistical process controls. There are numerous references, however, to data collection and analysis processes that are used to control defects and process aberrations.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Corning TPD considers the continuous improvement of customer satisfaction to be a basic requirement for business success. The company uses many customer processes to collect and analyze data to

gauge customer satisfaction, to quickly respond to customer issues, and to plan ongoing improvements for their customer satisfaction processes.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

Employees at Corning TPD complete Quality Awareness training as part of the company's overall training and development plan. Corning TPD also uses a training model that matches business objectives with requirements for employee training. This model encourages employees to be personally involved in their work, to perform at a high level of quality, and to achieve a high level of job satisfaction.

5. **Apply and promote worker involvement in quality improvement programs.**

Continuously improving quality is integral to every person's job at Corning TPD. Strategic directions for improving quality are set by the Executive Leadership Team. Objectives for achieving these strategic directions are then set by functional group management for each of the company's functional groups, and for each individual employee.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

Corning TPD has demonstrated significant improvements in the quality of goods and services. From 1985 to 1995, the number of products returned has been reduced by a factor of 24; and the time to deliver products to customers has been reduced 90%. From 1994 to 1995, manufacturing cycle time was reduced by 20%. The 1989 hazardous waste level has been reduced 84%. From 1991 to 1995, defective parts from suppliers decreased 80%. Between 1987 and 1995, Corning TPD reduced the cost of optical fiber 50%, and at the same time increased sales, market share, and profitability (Standard Overview; Application Summary).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

Corning TPD makes available detailed information on its quality journey and how it became the market leader in optical fiber. Because Corning TPD was founded the same year (1983) that Corning Inc. implemented its new emphasis on total quality, total quality management has always been a part of Corning TPD's culture. It was not necessary, therefore, for the company to change its culture to achieve eminence.

Company: **ADAC Laboratories**

Year of Award: **1996**

Award Category: **Manufacturing**

COMPANY PROFILE

ADAC Laboratories was founded in 1970. The company designs, manufactures, markets, and supports nuclear medicine imaging products, radiation therapy products, and products to manage healthcare information. Its products are complex, consisting of thousands of parts, most of which are purchased from suppliers. ADAC is located in Milpitas, California. The company has 710 employees (Application Summary).

In the mid 1980s, ADAC underwent a financial and operational turnaround, and total quality management was implemented to change the culture of the company. The company's mission is "to become the most respected and admired company in the worldwide healthcare market by 1998" (Application Summary, p. 1).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) *TQM at ADAC.* This is a forty two page booklet that describes in great detail ADAC's TQM practices.

(4) A copy of ADAC's 1995 Annual Report

(5) A copy of ADAC's 1996 Form 10-K.

(6) Five press releases on various subjects.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

ADAC has adopted or adapted four innovative quality practices. These are: DASH, a "market-in" philosophy, the "five evils", and supplier quality management (TQM at ADAC).

DASH is ADAC's comprehensive planning process, which is used to define and deploy the company's objectives. The DASH process analyzes data from the past and present, then uses this data to forecasts future trends, to identify the "vital few" issues that the company will focus on for the coming year. DASH uses these vital few issues to develop objectives and associated initiatives, and

then deploys these objectives and initiatives throughout the organization.

ADAC's philosophy on customer satisfaction is dictated by its market-in philosophy. Market-in is based on the belief that the final determinant of a product's success is a high level of customer satisfaction. To achieve this high level of customer satisfaction, market-in uses customer input to develop products. ADAC contrasts its market-in philosophy with the "product-out" philosophy, which (according to ADAC) holds that customers don't really know what they need, and so the final determinant of a product's success is that it performs to specification.

ADAC has adopted what the Japanese call the five evils, as its focus for identifying and correcting weaknesses. ADAC's five evils are: defects, mistakes, waste, delays, and accidents. ADAC maintains that the company's ability to identify root causes of problems, and to develop and implement successful long lived solutions, is due to the company's focus on identifying and correcting weaknesses.

ADAC uses suppliers extensively in the manufacture of its products. Because the company considers the quality of products it purchases from suppliers is a critical factor in maintaining the quality of ADAC products, the company has established extensive processes to ensure that the products it receives from its

suppliers meet ADAC's quality standards.

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   ADAC's senior management provides leadership of, and is completely committed to the company's total quality program. The company's mission, purpose, and core values, and the quality principles that guide the company's operations clearly reflect this leadership and commitment.

   Management's role as leader of the company's quality programs extends into the company's daily routines. Part of the daily work of managers is monitoring the activities of improvement teams, and assisting with corrective action.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   ADAC uses statistical process control extensively, which has improved the cost and quality of ADAC's manufactured products. The company regularly uses all seven of the traditional statistical process control quality

tools: pareto diagram, cause and effect diagram, check sheet, graphs, scatter diagrams, histograms, and control charts. The company also uses a number of other measurement and analysis tools to monitor the performance of key areas of the company's operations.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

Customer satisfaction, and exceeding customers expectations are principal objectives at ADAC. The company's strategies, processes, and programs emphasize customer orientation, and include the expectation that executives spend 25% of their time with customers. ADAC'c market-in philosophy ensures that product development and design is market oriented.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All ADAC personnel, at all levels, are trained in quality management. Employees receive 90 minutes of training on ADAC's quality system during their orientation meeting. This training is followed by sixteen hours of quality training, which includes statistical analysis. Executives are required to attend a six day course on "TQM for Senior Executives," and regularly attend other courses on TQM (Application Summary).

5. **Apply and promote worker involvement in quality improvement programs.**

The DASH planning process, aligns the activities of all company employees, and ensures that all levels of personnel are involved in the company's total quality management processes and in meeting the company's annual objectives for improving quality and performance. Also, most employees participate as members of highly empowered teams, and all manufacturing employees are members of self-directed work teams.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

ADAC has demonstrated significant improvements in the quality of goods and services. From 1990 to 1995, revenue per employee increased from $200,000 to $330,000 (which was 65% better than its nearest competitor), customer retention rates increased from 70% to 93%, and contract renewals increased from 85% to 95%. From 1990 to 1996, the company's share of the nuclear medicine market increased from 6% to 50%; company revenues tripled; and operating expenses decreased 26%. From the start of 1994 to the end of 1996, the cost of labor per unit product was cut from $15,000 to $7000, and defect rates decreased 40%.

In a 1995 survey of 2000 medical clinics, which assessed customer satisfaction with suppliers, ADAC led its competitors in every category (Application Summary; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

ADAC makes available very detailed information on how it was able to change their culture and achieve eminence.

Company Name: **Custom Research, Inc.**

Year of Award: **1996**

Award Category: **Small Business**

COMPANY PROFILE

CRI was founded in 1974. It is marketing research firm, which specializes in new product development for the consumer, medical, and service industries. CRI is the first professional services firm to win the MBNQA. CRI is headquartered in Minneapolis, MN. In 1996, the company had 100 employees (Application Summary).

When the company began its quality journey in 1974, according to its founders, Judy Corson and Jeff Pope, quality defined the way it would do business (CRI Yellow Pages).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) *CRI Yellow Pages.* This is a special edition of CRI's company newsletter, which announces that the company had won the MBNQA.

(3) *Quality Management.* This is a newsletter produced by the Bureau of Business Practice, Waterford, CT. Issue 2006, March 25, 1997.

(4) *In the News.* This is a summary of news coverage, which resulted from CRI winning the MBNQA.

(5) *Quality management well worth the time and effort.* This is a reprint of a commentary article, from the Minneapolis-St. Paul Star Tribune, July 8, 1996.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

Custom Research has always been serious about delivering and continuously improving the quality of its services. In 1988 CRI adopted a highly focused "customer-as-partner" approach, which integrated the customer more closely into the development and approval processes of CRI's services (Standard Overview).

In 1990 CRI began to use the MBNQA criteria to identify processes that were in need of improvement; and in 1991 was a MBNQA applicant. The company was again an applicant for the Award (and received site visits) in 1992, 1993, 1994, and 1996 — and won the MBNQA in 1996. CRI believes that the success the company has achieved, through its quality management efforts, has been due to its ability to identify, map, and continuously improve its key processes. CRI credits the recommendations it received from the MBNQA audits with having driven these changes (Quality management well).

CRI combines a "high tech - high touch" approach to its process for satisfying customers. The high touch element is facilitated through a flat organizational structure, which allows information to flow freely among CRI employees, and between customers and CRI personnel. The high tech element is facilitated through a focus on being aware of, and implementing, technology that can help improve CRI's performance (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. Demonstrate managerial leadership in the development and implementation of quality improvement programs.

CRI states that its executives are involved in crafting the company's goals

and strategies (Standard Overview). The documentation, however, does not provide any evidence of management leadership in the development and implementation of CRI's quality improvement programs.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

There is no reference in CRI's documentation to the use statistical process control to reduce cost and improve the quality of the company's services. There is reference to obtaining feedback from clients, however, no mention is made of using this feedback to reduce the cost, or to improve the quality of services.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

One of the changes CRI made in its operations was to treat its customers as partners, by which the company means it fully involves the customer in the design and approval of its services, and that CRI's quality is client driven. CRI aims to meet or exceed customer expectations, and uses well developed systems to assist in understanding customer expectations. A company goal for CRI is to serve as a model for other professional services firms (Standard Overview).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

All personnel at all levels receive job-specific training that addresses quality. There is no specific reference, however, in CRI's documentation to the training of personnel specifically in quality management practices.

5. **Apply and promote worker involvement in quality improvement programs.**

CRI promotes worker involvement in continuous improvement through the use of a variety of recognition programs. With this exception, there is no reference in CRI's documentation, to the involvement of workers in the company's quality improvement programs.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

CRI has demonstrated improvements in the quality of its services. Because the data on the improvements is not comparative and, or, are not quantified, it is not clear if the improvements are significant. From 1988 to 1996, revenue per employee has continually increased, and customer satisfaction increased. In 1996, 97% of customers said that CRI met or

exceeded their expectations, and 92% said CRI performed better than its competition.

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The information provided by CRI is not sufficiently detailed to help other Untied States organizations achieve eminence. Because the company was founded on quality, it was not necessary for it to change its culture. The information that was provided, therefore, could not be used by another United States organization to change its culture to achieve eminence.

Company: **Dana Commercial Credit**

Year of Award: **1996**

Award Category: **Service**

COMPANY PROFILE

Dana Commercial Credit (DCC) was founded in 1980, and is a wholly owned subsidiary of Dana Corporation. DCC provides a diverse range of business lease financial services to the automobile, auto parts, trucking, and heavy equipment industries. DCC is headquartered in Toledo, Ohio. The company has 547 employees (Standard Overview).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) Two 1996 Annual Reports. One version is packaged to look like the

company's MBNQA application summary.

(4) Three pamphlets. These describe "The Dana Style", the company's management philosophy, and the company's future directions.

(5) A four page brochure, which describes the company's "Achieving Business Excellence Conference."

SUMMARY OF MEASURES TAKEN BY THE COMPANY

In 1992, using MBNQA concepts and principles, DCC's parent company created the "Dana Quality Leadership Award." This prompted DCC to introduce its own total quality initiative (Application Summary).

DCC's corporate culture is based on the belief that its employees are the company's most valued asset, and that its employees are critical to DCC's success in achieving high levels of customer satisfaction. The company has numerous ongoing processes for managing customer satisfaction; and has numerous programs to train, recognize, and reward employees for their contribution to DCC's business objectives, most of which are tied to customer satisfaction (Application Summary).

DCC's strategic planning process is its principal mechanism for deploying quality. The process defines plans for achieving the company's goals for quality,

customer satisfaction, operations, employees, and suppliers. These goals focus on achieving four key areas of customer requirements, which change annually (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   DCC has a committee that focuses on the continuous improvement of processes. This committee is chaired by the Chairman and Chief Executive Officer, and includes the heads of the seven DCC product - business groups. The annual quality review process is led by the Division Operating Committee (DOC), which includes the heads of the seven product - business units. The DOC also audits performance in meeting the key customer requirements. It is from the results of this audit that further requirements and initiatives are developed.

2. **Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.**

   Statistical process control has improved the cost and quality of DCC's services. In addition to statistical process control, DCC uses several other

"scorecards" to track actual versus planned performance, for human resources and customer satisfaction. The results from these company scorecards, which DCC calls its SWOT analysis, are used to analyze the company's strengths, weaknesses, opportunities, and threats (Standard Overview).

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

DCC is committed to customer satisfaction, and its processes reflect that commitment. The company is focused on completing every transaction on time; completing transactions without changing terms and conditions; and being first to market with state-of-the-art, customer oriented, lease products. DCC is proactive in addressing customer expectations and future customer needs. Customer expectations are reviewed monthly to determine areas for possible improvement, and the company conducts ongoing extensive primary and secondary research to facilitate the development of customer oriented products (Application Summary).

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

DCC's educational group provides an average of forty eight hours of training to each DCC employee. The training covers interpersonal

communication, marketing, technical areas specific to the employee's area of work, and quality. The quality training includes specific courses on the MBNQA criteria. Senior managers are given special training on achieving customer satisfaction.

5. **Apply and promote worker involvement in quality improvement programs.**

DCC's executive management team oversees the strategic planning process, which includes the company's goals for quality. These plans are then translated and deployed throughout the organization. Worker involvement in quality management is supported by DCC's semi-annual performance appraisal system. This system motivates employees to focus on the company's objectives for customer satisfaction, generating ideas for continuous improvement, and promoting participation and involvement.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.**

DCC has demonstrated significant improvements in the quality of its services. From 1991 to 1996, rates of return on equity and assets increased more than 45%; the dollar volume of leases more than tripled to

over $1 billion; and the volume of leases handled per person increased more than 50%. Since 1994, customer satisfaction scores have exceeded 4, on a 5 point scale, which exceeds the industry average by almost two points (Application Summary; 1996 Annual Report; Standard Overview).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

DCC provides detailed information that describes how the company was able to change its culture, achieve high levels of quality, and achieve eminence, and which could be used by other United States organizations.

Company Name: **Trident Precision Manufacturing**

Year of Award: **1996**

Award Category: **Small Business**

COMPANY PROFILE

Trident was founded in 1979. The company manufacturers precision sheet metal components and electro-mechanical assemblies. It is located in Webster, New York. In 1996, the company had 167 employees (Standard Overview).

In 1988, Trident was being pressured by its customers and its employees to continuously improve the quality of its products. The company's president and CEO, Nicholas Juskiw, responded by initiating the development of a Total Quality Management program. Over a fourteen month period, this program (which the company called Excellence in Motion) was developed and implemented by Trident's executive team (Application Summary).

DOCUMENTATION PROVIDED BY THE COMPANY

(1) The Standard Overview that all MBNQA winners provide, either on request or through NIST.

(2) A summary of the company's MBNQA application.

(3) A registration form for the company's "Excellence in Motion" seminar.

SUMMARY OF MEASURES TAKEN BY THE COMPANY

The goal of Trident's Excellence in Motion program is to make the company the undisputed leader in its industry. To achieve this, the company has focused on continuously improving its five key business drivers: supplier partnerships, employee satisfaction, operational performance, shareholder value, and customer satisfaction. Every year Trident reviews its performance in these areas, and sets new goals for the upcoming year. These new goals are then deployed throughout the company (Application Summary).

Trident believes that its workers are the "source and foundation for quality leadership and competitiveness" (Application Summary, p. 9). The company's human resource policies reflect this: it spends an amount equal to 4.4% of payroll on training and education (which is two to three times the industry average for a small company), and has a strong reward and recognition

program (Standard Overview).

THE PERFORMANCE CRITERIA CONTAINED IN THE LEGISLATION AND THE MEASURES TAKEN BY THE COMPANY

1. **Demonstrate managerial leadership in the development and implementation of quality improvement programs.**

   Trident's senior management team devised and introduced the company's Excellence in Motion program. An important part of the program is that the senior management team be a role model for the program.

2. **Apply and promote the use of statistical process control to reduce the cost and improve the quality of manufactured products.**

   Trident promotes and applies the use of statistical process control to reduce the cost and improve the quality of its manufactured products.

3. **Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.**

   Customer orientation is fundamental to Trident's practices and its Excellence in Motion program. Customer satisfaction is one of the five key business drivers, however, the company emphasizes that the other four key business drivers must also focus on achieving total customer

satisfaction.

4. **Apply and promote effective training, of all levels of personnel, in quality management practices.**

   All employees are trained in total quality management, and all employees are encouraged to increase the quality levels of their professional skills.

5. **Apply and promote worker involvement in quality improvement programs.**

   Trident has established "quality as its basic business plan" (Standard Overview). Employee involvement in the implementation of this plan is encouraged through the strategic goal deployment process. This process empowers employees to develop and implement plans that will allow them to participate in the achievement of company goals. Further, all employees are empowered to monitor and improve the company's quality and manufacturing processes.

6. **Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or services.**

   Trident has demonstrated significant improvements in the quality of goods and services. From 1988 to 1995, employee turnover decreased from

41% to 5%, sales per employee increased from $67,000 to $116,000, and defect rates continuously declined (in 1994 and 1995, no defects were reported). From 1990 to 1995, on-time delivery increased from 87% to 99.94%, and the company's customer quality rating increased from 97% to 99.97% (Standard Overview; Application Summary).

7. **Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.**

The information made available by Trident, on how the organization was able to change its culture and achieve eminence, does not provide sufficient detail to be useful to another United States organization that is interested in changing its culture and achieving eminence.

SECTION THREE:

THE ANALYSIS

This section provides an analysis of the data developed in Section 2, using the seven performance criteria developed in Section 1. In each case, the performance of all twenty eight companies is examined against each of the seven performance criteria.

Performance Criterion 1.

Demonstrate managerial leadership in the development and implementation of quality improvement programs.

In all twenty eight companies, managerial leadership drove the development and implementation of the quality improvement programs; and the chief executive officer of each company supported and actively participated in the successful implementations of the company's quality improvement programs. Each company also had a team, which was made up of executives from cross functional areas, that was responsible for developing and deploying its quality improvement programs.

Performance Criterion 2.

Apply and promote the use of statistical process control, to reduce the cost and improve the quality of manufactured products.

The use of statistical process control, to reduce the cost and improve the quality of products, was used extensively by seventeen of the twenty eight companies. The other eleven companies did not specifically reference the use of statistical process control. In each case, however, these companies all made reference to the use of data collection processes to monitor and control the quality of the company's products and, or, services. Ten of these eleven companies reported extensive use of data collection to facilitate analysis and to identify areas that needed corrective action, consistent with the company's continuous improvement practices. The exception was Custom Research, Inc. (CRI), which only referred to data collection when detailing its customer satisfaction evaluation process.

It is clear that the drafters of the Act intended to encourage effective quality control "to service industries as well as manufacturing" (The Malcolm Baldrige National Quality Improvement Act, 1987, p. 724). The wording of the Act, however, only refers to the effective use of statistical process control to improve the cost and quality of manufactured products. Six of the winners were providers

of services, rather than manufacturers of products. Of the six service providers, only Dana Commercial Credit (DCC) reported the use of statistical process control to improve the cost and quality of their services.

Statistical process control (SPC) was developed by Walter Shewhart to measure and control variations that he said were inherent in any manufacturing process (Juran, 1988, p. 24.3). SPC requires sophisticated data collection and analysis, and has proven very reliable for helping companies reduce defects, and has been used to reduce defects to the 3.4 parts per million level required by Six Sigma. Although SPC can be applied to any process, it is not well suited to many non-manufacturing processes (Ishikawa, 1985), because these processes "often have variable components that make statistical control methods ineffective" (Clemmer, 1992, p. 195).

The fact that six of the seven service providers did not use SPC does not mean, *ipso facto*, that these companies were using an inferior data collection and analysis system. The effectiveness of non-SPC methods of data collection and analysis could be equal or superior to SPC for improving the cost and quality of non-manufacturing processes, including services.

Performance Criterion 3.

Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.

All twenty eight companies applied and promoted the practice of customer orientation to improve the market demand for their products and services. Goals for customer satisfaction, when quantified, were at or very near to 100%, with many winners stating that to achieve 100% customer satisfaction they focused on exceeding customer expectations. Many also stated that customer satisfaction was their highest priority.

For example: Motorola: The "Voice of the Customer" is one of two principal data sources for defining strategic quality goals (Standard Overview); Xerox: The number one priority for all Xerox employees is customer satisfaction (Standard Overview); Cadillac: The "master plan" is the customer satisfaction plan (For General Motors the Master); Federal Express: 100% customer satisfaction is the central driver of the quality initiatives (Standard Overview); IBM Rochester: Customers are the final arbiter for the quality of the company's products (Application Summary); Wallace: Required customer complaints be resolved within 60 minutes (Standard Overview); Marlow: Customer satisfaction is the overriding aim of the company's TQM programs (Standard Overview); Solectron:

"The customer is our first priority, and it is our constant objective to satisfy customer requirements on time with unmatched quality" (Solectron Beliefs, p. 1); AT&T Universal Card Service: From its inception, the company has believed that is success has depended on its customer focus (Application Summary); Ritz Carlton: Insists on 100% compliance to customer requirements (Application Summary); TI-DS&EG: The company says it has only one objective — "Customer Satisfaction through Total Quality" (Texas Instruments: Total Quality, p. 1); Eastman Chemical Company: The company's Quality Management Policy begins and ends with the customer (To Be the Best); AT&T Consumer Communications Services: "Satisfying customers is at the core of the business" (Application Summary, p. 2); Corning TPD: Customer satisfaction is considered a "basic requirement" for business success (Application Summary); ADAC: Customer satisfaction and exceeding customer expectations are the principle objectives at ADAC (Application Summary); Trident: All business drivers are focused on achieving total customer satisfaction (Application Summary); and Custom Research, Inc. (CRI): The company considers the customer to be its partner (Standard Overview).

Customer orientation is a necessary precondition for delivering high levels of customer satisfaction. Customer orientation is facilitated by the ongoing execution of numerous processes and practices to measure and continuously improve customer satisfaction. Twenty seven of the twenty eight companies (the

exception being CRI, which stated only that it performs after purchase satisfaction surveys) regularly collect data related to customer satisfaction, using multiple sources and techniques. Many of the companies stated that data was collected and analyzed daily, as well as over longer time periods; and that the data was analyzed and used to achieve both short and long term objectives related to customer satisfaction. The short term objectives were generally related to satisfying the customer's present use of the company's products and services. The longer term objectives were generally related to defining future market oriented products and services.

Although many of the companies stated that customer satisfaction was its primary objective, this is not always supported by other information in the company's documentation. None of the companies that provided detailed documentation have a simple hierarchy of objectives, with customer satisfaction at the top of the hierarchy. Rather, in most cases there were three objectives that, through tight linkage, shared the top position. These three tightly linked objectives were customer satisfaction, employee satisfaction, and satisfying business objectives.

Performance Criterion 4.

Apply and promote effective training, of all levels of personnel, in quality management practices.

All of the twenty eight companies provided for the ongoing training of their employees. Many companies reported providing an average of forty or more hours of training per employee per year. Twenty four of the twenty eight companies state that personnel at all levels are given specific training in quality management practices. Of these twenty four, twenty two report that 100% of their employees, at all levels, are trained in the company's quality management practices. The other two companies were Westinghouse CNFD and Granite Rock. Westinghouse CNFD estimated that 90% of all employees were trained, and Granite Rock reported that many employees were trained.

Four of the twenty eight companies do not state specifically that they train employees in quality management practices. These four companies are: AT&T-CCS, CRI, Federal Express, and Milliken. Of these, CRI states that it embeds quality into its training programs, and it is clear from the documentation that all of the companies integrate quality into all of their operations and processes. It is possible and even probable, therefore, that AT&T CCS, Federal Express, and Milliken have, like CRI, embedded training in quality management practices into

their training programs.

Training in quality management practices in some cases extends beyond the company's employees to one or more of the company's partners. Moreover, in many cases, these partners contributed significantly to the success of the winning company's quality management programs. Many of the twenty eight companies rely heavily on suppliers, and have mandated that their suppliers be trained in the company's quality management practices. Milliken reports that training its suppliers is part of its quality management practices. Cadillac stated that they provided extensive training, in their quality management practices, to the United Auto Workers Union — and found that this provided the company with union support that was critical to the successful implementation of its quality management programs.

Performance Criterion 5.

Apply and promote worker involvement in quality improvement programs.

Twenty five of the twenty eight companies reported the application and promotion of worker involvement in quality improvement programs. Globe Metallurgical explained that promotion of worker involvement was not necessary at Globe, because employees understood that their involvement was a

requirement for the successful continued operation of the company, and of their employment. CRI reported the promotion of all workers in continuous improvement, which is a subset of the broader category of quality improvement. Federal Express did not mention the application or promotion of worker involvement.

These twenty five companies used three principal methods to foster the promotion of worker involvement in quality improvement processes. These methods are: (1) The deployment of policy objectives. This practice begins with the organization's executive team defining strategic or key objectives to meet company goals for quality improvement. The objectives are then deployed through the organization, ending at the individual worker and, or, at a team that develops action plans that are consistent with the company's strategic objectives; (2) The extensive use of teams; and (3) Reward and recognition programs, for individuals and, or, teams. These programs are linked to the successful delivery of the company's quality improvement objectives.

Performance Criterion 6.

Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services.

All twenty eight companies claim that their quality management practices have resulted in improvements in various areas of their operations. Specific areas of improvement vary by company, but include, *inter alia*: defect reductions, cost reductions, reductions in the number of suppliers, reductions in cycle times, reductions in customer complaints, reductions in service response times, reductions in the production of hazardous wastes, increases in inventory turnover, increases in revenue per employee, increases in customer satisfaction, increases in sales volume, increases in supplier performance, increases in market share, decreases in employee turnover, and improvements in employee safety statistics.

The choice of measures by the companies (to indicate that their use of effective quality management practices has resulted in significant improvements) appear to be arbitrary; and in some cases the measures used do not seem to relate to the quality of products or services. In its evaluation process, however, NIST has asserted that the immersion of a company in quality management practices will,

directly or indirectly, improve the company's ability to deliver superior goods and services. Based on this assertion, it could be argued that even measures that are seemingly unrelated to the quality management practices may in fact be indirectly related to the improvements the company has made in the quality of its goods and, or, services.

Twelve of the twenty eight companies provided only a minimal amount of data to support their claim that significant improvements had been made in the quality of their goods and, or, services. The data provided by these twelve companies was unquantified (that is, the company simply noted that a subject area had either increased or decreased), or the number of quantitative, comparative and, or qualitative measures provided were too few in number to indicate that the company's quality management practices had in fact resulted in significant improvements in the quality of the company's goods and, or, services. These twelve companies are: Globe Metallurgical, Texas Instruments DS&EG, Federal Express, GTE Directories, Wallace Compnay, Marlow Industries, CRI, AT&T UCS, Motorola, Granite Rock, Milliken, and AT&T-TSBU.

Based on Congressional testimony that contributed to the establishment of this criterion, the results were meant to demonstrate sustainable continuous improvement. In many cases, however, the results cited by most of the companies do not indicate that improvements were continuously achieved, but

simply detail results that occurred between two points in time. Some of the companies implemented their quality improvement programs for three years, or less, before winning the Award, and would be unable to demonstrate sustained continuous improvements. The quality improvement programs at Globe Metallurgical, AT&T-TSBU, and Zytec had been in place for only three years before they received the Award; and the program at AT&T-UCS had been in place for only two years.

Performance Criterion 7.

Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence.

Ten companies satisfied this performance criterion. These companies were: ADAC Laboratories, Ames Rubber Corporation, Armstrong BPO, Cadillac, Dana Commercial Credit, IBM Rochester, Solectron, TI-DS&EG, Wainwright, and Xerox. The other eighteen companies, for a wide range of reasons, did not satisfy this performance criterion. These reasons are:

1. Three companies provided detailed information, but did not provide information on how they changed their culture to achieve eminence.

Zytec Corporation, AT&T UCS, and Corning TPD provided detailed information that could be used by another United States organization to achieve eminence. Because these three companies were, from their inception, built upon principles of total quality management, they were not able to provide information on how they changed their culture to achieve eminence.

2. Six companies provided large amounts of information, however, the information was insufficiently detailed to be of use to another United States organization with an interest in changing its culture or achieving eminence. These companies were: AT&T-CCS, Eastman Chemical Corporation, GTE Directories, Trident, Custom Research, Inc., and Granite Rock.

3. Two companies provided large amounts of information, however, the information was not related to changes that had been made that resulted in the company receiving the Award. AT&T-TSBU has, subsequent to its winning the Award, been merged into the Lucent Technologies. The information provided detailed two quality practices in use at Lucent, which were not related to the practices that led to AT&T-TSBU winning the award. Motorola provided large amounts of information, but this was all on the company's current Six Sigma quality program.

4. One company provided sufficient detailed information, however, their situation is so company specific and industry specific that it would be of limited value to another United States organizations with an interest in changing its culture and, or, achieving eminence. The Ritz Carlton provided information that was detailed, however the quality practices used at the Ritz Carlton are so specific to a luxury hotel operation that they would not be of general use to other United States organizations, beyond another luxury hotel organization. Also, because The Ritz Carlton was founded on quality practices (or what the company calls luxury practices), it was not able to provide information on how it changed its culture.

5. One company provided information that details how it changed its culture and achieved eminence, however, this was due to many factors — only one of which was the company's quality management practices. Globe Metallurgical was driven more by perseverance than quality management practices. The information they provide describes a series of devastating blows, which could have destroyed the company, and a management team that would not give in. Part of the company's survival strategy included quality management, but the information they provided on their quality management practices is very limited. The Standard Overview attributes the company's success to its quality practices, however, one of the documents provided by the company is a Harvard Business Review

interview with the company's CEO, Arden Sims, in which Sims plays down the role of quality in the transformation of his company.

6. Two companies provided an insufficient amount of information. The information from Westinghouse CNFD was limited and focused on Westinghouse quality practices, rather than the quality practices of its CNFD division. Milliken sent a letter stating that the reason they did not provide detailed information was because they are privately owned, and did not publish proprietary information.

7. Two companies did not provide any information. Federal Express failed to respond to my five requests for information (two by phone, two by fax, and one by e-mail); and does not provide any information related to winning the Award, or to its quality practices, on its world wide web site. Marlow Industries failed to respond to my four requests for information (two by phone, and two by fax); but has a copy of their Standard Overview on their world wide web site.

8. One company, Wallace Company, did not provide any information, because it is no longer in business.

A couple of companies offered additional documents for a fee (between $35 and $50), and several companies, generally the more recent winners, offered for fee seminars. The average cost of a half or full day seminar was $300, plus travel expenses. I did not order these for fee materials, or attend these seminars for two reasons. (1) One of the objectives of the Act is provide for the dissemination of information, and charging a fee of $35 to $50 for documents or $300 plus a requirement to travel and pay for travel for a seminar discourages dissemination of the information on their quality practices; and (2) because I wanted to maintain sample consistency, the same data collection process was used for all companies.

Seventy one percent of the companies responded to my first request for information, and 50% percent responded on the first request and within one week. Four companies (ADAC Laboratories, Armstrong World Industries BPO, Xerox, and AT&T-TSBU) required two requests; and one company (Solectron) required four requests.

Three companies (Cadillac, TI-DS&EG, and ADAC Laboratories) provided excellent information on their quality management practices, and also provided a substantial amount of general information on quality management practices.

CONCLUSIONS

Conclusion 1: The Criteria

An analysis of the data developed from the documentation provided by the winners of the MBNQA, from 1988 to 1996, indicates that all winners of the MBNQA satisfied two of the performance criteria contained in the legislation, a majority of the winners satisfied four criteria, and less than a majority satisfied one of the criteria.

The two criteria that were satisfied by all winners of the award were (1) Demonstrate managerial leadership in the development and implementation of quality improvement programs; and (3) Apply and promote the concept and practice of customer orientation, to improve the market demand for products and services.

The four criteria that were satisfied by a majority of the winners of the award were (5) Apply and promote worker involvement in quality improvement programs (which was satisfied by twenty five winners); (4) Apply and promote effective training, of all levels of personnel, in quality management practices (which was satisfied by twenty four winners); (2) Apply and promote the use of

statistical process control, to reduce the cost and improve the quality of manufactured products (which was satisfied by seventeen winners); (6) Apply and promote the use of effective quality management practices that result in significant improvements in the quality of goods and, or, services (which was satisfied by sixteen winners)[6].

The criterion that was satisfied by less than a majority of the winners of the award was (7) Produce and make available detailed information, which would be usable by other United States organizations, on how the organization was able to change its culture and achieve eminence (which was satisfied by ten winners).

Conclusion 2: The Objectives

An analysis of the observable results of the implementation of the legislation, when compared to the objectives defined in Section 1 and contained in the legislation, indicates that the MBNQA has succeeded in fulfilling two of the principle objectives, and has partially succeeded in fulfilling the other objective.

Objective 1.

The data contained in Section 2, and the analysis of that data in Section 3,

[6] All twenty eight companies claimed that their quality management practices resulted in improvements in various areas of their operations, however, only seventeen winners provided data that indicates that their quality management practices resulted in *significant* improvements.

indicates that the MBNQA has fulfilled the first objective contained in the legislation. NIST has established and conducted the MBNQA as "a national quality award program, which gives awards to selected companies and other organizations in the United States that practice effective quality management and, as a result, make significant improvements in the quality of their goods and services" (Malcolm Baldrige National Quality Improvement Act, 1987).

Objective 2.

The data contained in Section 2, and the analysis of that data in Section 3, indicates that the MBNQA has fulfilled the second objective: "To encourage companies and other organizations in the United States to practice effective quality management in the provision of goods and services" (Malcolm Baldrige National Quality Improvement Act, 1987). It is clear from the documentation provided by the winning companies that the MBNQA has encouraged some of those companies "to practice effective quality management in the provision of goods and services" (Malcolm Baldrige National Quality Improvement Act, 1987).

It is also evident from the data contained in Section 2, and the analysis of that data in Section 3, however, that most of the winning companies had already adopted effective quality management practices prior to considering becoming applicants for the Award, and in some cases, had established effective quality management practices prior to the creation of the Award. In these cases, it

could be concluded that instead of there being a causal relationship between the Award and the use of effective quality management practices by those companies, the MBNQA was simply rewarding existing practices.

But this possibility was anticipated: Members of Congress made it clear that companies would not be penalized from winning the award because they began their quality journey before the passage of the Act. And all companies that won the Award showed improvement in their quality management practices as a result of adopting MBNQA criteria.

It could also be argued that this *ex post facto* recognition could contribute to achieving the second objective of the Act by encouraging those winning companies to continue to use their quality practices, (and thereby demonstrate the continuous improvement that was emphasized in the Congressional testimony). Also, by lauding the achievement of the winners, this recognition could encourage other companies to adopt similar practices. That is, the legislation does not state that an objective of the national quality award program is to *cause* companies to practice effective quality management, but only requires that it "*encourage* companies and other organizations in the United States to practice effective quality management in the provision of goods and services" (emphasis added) (Malcolm Baldrige National Quality Improvement Act, 1987).

There are reportedly hundreds of companies, perhaps thousands, that have been encouraged by the award program's self assessment process to practice effective quality management in the provision of goods and services. Although data on these companies, many of which made it to advanced stages of the MBNQA review process, would probably support the conclusion that the MBNQA has fulfilled the second objective, that data is outside the scope of this paper.

Objective 3.

The data contained in Section 2, and the analysis of that data in Section 3, indicates that the MBNQA has partially fulfilled the third objective contained in the legislation and defined in Section 1: "To disseminate information about the successful quality management strategies and programs, which provides specific guidance for other American organizations that wish to learn how to change their culture, manage for high quality, and achieve eminence" (Malcolm Baldrige National Quality Improvement Act, 1987). Although twenty five of the twenty eight winning companies provided information, only ten satisfied this criterion by providing information that other United States companies could use to " change their culture, manage for high quality, and achieve erninence" (Malcolm Baldrige National Quality Improvement Act, 1987). The administrators of the MBNQA (NIST) did provide information on all twenty eight companies, in the form of the Standard Overview, however, this information is limited to basic data about each winning company and its quality practices and does not provide "specific

guidance for other American organizations that wish to learn how to change their culture, manage for high quality, and achieve eminence" (Malcolm Baldrige National Quality Improvement Act, 1987).

Conclusion 3: The Performance of the MBNQA

Based on an analysis of the data developed from the documentation provided by the winners of the MBNQA from 1988 to 1996, it can be concluded that the Malcolm Baldrige National Quality Award has satisfied most of the objectives and criteria contained in the legislation. When examined against the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation with the observable results of the implementation of the legislation, it can be further concluded that the performance of the MBNQA has been a qualified success.

BIBLIOGRAPHY

This bibliography does not repeat the listings of the Standard Overview for each of the twenty eight companies, and does not repeat the listings of the documents that were provided by twenty five of the winning companies in response to my requests. These documents are listed, by company, in Section 2 of the paper.

Brush, K. (1997a). International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in the United States, Germany, and Japan from 1945 to 1982. Presented at the South Western Regional Conference of the International Studies Association in New Orleans, March 23, 1997.

Brush, K. (1997b). The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings and the Passage of the Legislation. (1982 – 1987). Presented at The Business and Economics Society International Conference in Athens, Greece, July 19, 1997.

Clemmer, J. & Sheehy, B. (1992). Firing on all Cylinders. Homewoood. IL: Business One Irwin.

Deming, W. E., (1982). Out of the Crisis. Cambridge, MA: MIT Center for Advanced Engineering Study.

Hearing on the Privatization of the National Technical Information Service, and H.R. 812, The National Quality Improvement Award Act of 1987. 100th Cong., 1st Sess. (1987). (Testimony of John Hudiberg, William Eggleston, Dr. Frank Gryna.)

H. Rpt. No. 100-96 on H.R. 812, "National Quality Improvement Act of 1987," May 18, 1987.

H. R. 5321, 99th Cong. 2d Sess. National Quality Improvement Award Act of 1986. August 1, 1996.

Imai, Masaki (1986). Kaizen: The Key to Japan's Success. New York: McGraw-Hill.

Ishikawa, Kaoru (1985). What is Total Quality Control? The Japanese Way. Englewood Cliffs, NJ: Prentice Hall.

Juran, J. M. (1988). Juran's Quality Control Handbook, Fourth Edition. New York: McGraw-Hill.

Malcolm Baldrige National Quality Improvement Act. Public Law 100-107 (H.R. 812), (August 20, 1987),

National Quality Improvement Act of 1987, (H.R. 812). Cong. Rec, 14875 –14877, (June 8, 1987).

S. Rpt. No. 100-143 on H.R. 812, "Malcolm Baldrige National Quality Improvement Act of 1987," August 4, 1987.

Strategies for Exploiting American Inventiveness in the World Marketplace. 99th Cong., 2d Sess. (1986) (Testimony of John Hudiberg, Dr. Joseph Juran, John Hansel, and Dr. Myron Tribus).

Union of Japanese Scientists and Engineers (1990). Deming Prize 40. Tokyo, Japan: Kohie SUZUE.

White House Conference on Productivity Act. Public Law 97-367 (H.R. 7292), (October 25, 1982).

White House Conference on Productivity. (1984), Productivity Growth: A Better Life for America. A Report to the President of the United States. (NTIS No. Pr 40.8:P 94/G 91).

The Origins, Evolution, and Outcomes of the Malcolm Baldrige National Quality Award

PDE Conclusions and Recommendations for Future Research

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March 22, 1998

THE UNION INSTITUTE

PDE CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

My Project Demonstrating Excellence (PDE) is a unified series of three papers that examine the origins, evolution, and outcomes of the Malcolm Baldrige National Quality Award (MBNQA). The three papers in this series are: Paper 1, "International Historical Antecedents to the Malcolm Baldrige National Quality Award: An Interdisciplinary Analysis of Developments in Germany and Japan from 1945 to 1982;" Paper 2, "The Malcolm Baldrige National Quality Improvement Act: An Examination of the Immediate Antecedents, the Congressional Hearings, and the Passage of the Legislation (1982-1987);" and Paper 3, "The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation. (1987-1996)."

Because the form of this PDE is a unified series of three articles, rather than a traditional dissertation, the conclusions relating to the research covered in each of the three articles are presented at the end of each of the respective articles. The following conclusions and recommendations for future research are the principal conclusions that come from the combined work.

PDE Conclusions

Conclusion 1

The rise in Japan's national competitiveness, and the fact that Japan focused on the United States market, were principal factors that contributed to the decline in the national competitiveness of the United States. The reason Japan focused on the United States market between 1945 and 1982, and became the United States' principal commercial competitor, whereas Germany did not, was that Germany was reintegrated into western Europe following WWII, whereas Japan was not economically reintegrated into east Asia.

Germany's reintegration into western Europe was facilitated by a central element of the Marshall Plan for western Europe. This central element stipulated that the Europeans were responsible for developing the program for Europe's recovery. The Committee for European Economic Cooperation (CEEC) was created to give effect to this provision of the Plan, and to develop the guiding principles of the European Recovery Program (ERP). These principles identified, *inter alia*, the need for integrating the economy of Germany with the economies of western Europe. All participating ERP countries pledged to cooperate to reduce the tariffs, and other barriers, to expand trade between themselves and with

the rest of the world. Although the United States strongly encouraged the full participation of Germany in the ERP, and although the nations of western Europe agreed that Germany's revival was a pivotal requirement of European recovery, most Germans were amazed that the nations on which it had inflicted a long and terrible war were offering Germany full membership in the collaborative rebuilding process.

In the plan for Japan's recovery, on the other hand, there was no goal to economically integrate Japan into east Asia, and no insistence that Asian nations should collaborate and take responsibility for their recovery plans. There was no United States insistence, or lobbying to the nations of east Asia, that Japan must be a key member in the east Asian economy; and there was also no Marshall Plan equivalent for the economic recovery of Japan. The economic recovery of Japan was determined by a combination of United States policy objectives and the implementation of those objectives under the unpredictable direction of Douglas MacArthur. The absence of a plan for Japan's economic recovery, similar to the Marshall Plan, was a major omission by United States Government officials that resulted in Japan not being economically reintegrated into east Asia.

At the end of the Marshall Plan in 1952, West Germany's trading position within Europe was strong and West Germany's economy continued to strengthen. The strength of the West German economy allowed it to play a key

role in fueling trade within Europe, and contributed to West Germany becoming a member in good standing in the European community of nations. By 1952 Japan had made significant economic progress, but this progress was not fueled by inter-Asian trade, it was largely fueled by the United States purchase of military supplies from Japan for the Korean Conflict. Up until 1970, the United States continued to prop up the economy of Japan through the procurement from Japan of billions of dollars of military supplies.

The United States provided strong encouragement to the nations of western Europe to reintegrate Germany into Europe, however, the United States did not strongly encourage the reintegration of Japan into east Asia and as a consequence Japan did not become integrated economically or socially into east Asia, and Japan's principal trading partner did not come from east Asia. Instead, Japan focused on developing its trade with the United States, which had a market that was unique in the combination of its economic size and receptivity to Japanese products. The failure of the United States to plan for the reintegration of Japan into the non-communist nations of Asia, which resulted in Japan focusing its competitive commercial efforts on the United States, contributed significantly to Japan's rise in national competitiveness, and the decline in United States national competitiveness.

Conclusion 2

The German and Japanese preoccupation with domestic economic recovery and economic development, rather than with foreign policy and ideological issues, contributed to the rise in the national competitiveness of those two countries; and the United States preoccupation with the Cold War and defeating the Soviet Union, rather than achieving economic and commercial objectives, contributed to the decline in the national competitiveness of the United States.

Preventing the expansion of communism and defeating the Soviet Union politically, economically, and militarily, and winning the Space Race, were the most important objectives of United States foreign policy throughout the Cold War. The priority given by the United States to the Cold War and defeating the Soviet Union required that its political, emotional, and financial resources be focused on fighting communism, fueling its buildup of militarily capability, and putting a man on the moon. This was done at the expense of domestic and international economic development. The United States assumed leadership in building and maintaining the global military forces that would protect the world from communist expansion and, what it saw as, the possibility of a third world war. The United States encouraged other free world nations to rebuild their economies, which it believed would be a better defense against the temptation of communism, rather than building their military. Germany and Japan were

not only encouraged to give priority to economic development, as part of the democratic reforms implemented during the Occupation, they were restricted from developing a military capability.

Although other factors discussed in Paper 1 contributed to the rise in the national competitiveness of Germany and Japan, and the decline in the national competitiveness of the United States between 1945 and 1982, it would appear that the rise in national competitiveness of Japan and Germany and the decline in national competitiveness in the United States was driven largely by the fact that Germany and Japan, on the one hand, and the United States on the other, had vastly different policy objectives. Germany and Japan shared economic recovery and economic development as their dependent variables, and were very successful in achieving those goals. The United States adopted the defeat of communism and the propagation of democracy as its dependent variables, and was very successful in achieving those goals.

Conclusion 3

The name of the Malcolm Baldrige National Quality Improvement Act notwithstanding, an examination of the record indicates that the Act was not introduced and passed because the United States Congress was concerned

about the quality of United States products and services. Nor does the record indicate that the Congress was influenced by a desire to correct problems related to the quality of United States products and services. Rather, the Act was introduced and passed in response to the rise in the national competitiveness of Japan, the United States trade deficit, the United States becoming a net debtor nation, and Japan becoming the world's largest creditor nation.

Following the posting of the United States trade deficit in 1982, the economists and quantitativists convinced the Congress that the cause of the United States trade deficit was the declining productivity growth rate. The economists and quantitativists also convinced the Congress that the United States deficit problem could be solved by increasing United States national competitiveness, by increasing the United States productivity growth rate. But in 1985, despite improvements in the United States productivity growth rate, the trade deficit continued to increase. This seriously damaged the credibility of the economists and quantitativists, and provided an opportunity for the qualitativists and the private sector managers to influence the Congress — and to supplant productivity with quality as the dominant contributing factor of United States national competitiveness.

This shift to a focus on quality also fitted with the continuing United States preoccupation with Japan. From 1985 to 1987, the Congress was increasingly

dominated by discussion of Japanese practices, and especially Japanese quality methods and the Deming Prize. This contributed to the belief by the Congress in the importance of quality as a principal determinant of United States national competitiveness; and that the development of a quality prize, similar to Japan's Deming Prize, would contribute to improvements in the quality of United States goods and services, to improving United States national competitiveness, and to an improvement in the United States trade deficit.

Conclusion 4

A principal factor that influenced the introduction and passage of the Malcolm Baldrige National Quality Improvement Act was the belief in the Congress that there is a positive correlation between productivity and quality. Although there was no supporting evidence for this positive correlation in the principal documents, there were explicit and implicit references to a causal relationship between quality and productivity. Reports and the drafts of the final legislation establishing the MBNQIA of 1987, make it clear that the Congress believed that improving the quality of United States products would improve United States productivity. As discussed in Paper 2, this shift of emphasis by the Congress from improving United States productivity and national competitiveness, to

improving quality in the United States, is consistent with Edelman's (1964) argument that the Congress frequently ties the achieving of lesser objectives to a failed larger objective.

Conclusion 5

The Malcolm Baldrige National Quality Award program has fulfilled two of the principal objectives contained in the legislation: NIST has established and conducted the MBNQA as a national quality award program, which gives awards to selected companies and other organizations in the United States that practice effective quality management and, as a result, make significant improvements in the quality of their goods and services. The Award program has also encouraged companies and other organizations in the United States to practice effective quality management in the provision of goods and services.

It is evident, however, that some of the winning companies had already adopted effective quality management practices prior to considering becoming applicants for the Award and, in some cases, had established effective quality management practices prior to the creation of the Award. In these cases, it could be concluded that instead of there being a causal relationship between

the Award and the use of effective quality management practices by those companies, the MBNQA was simply rewarding existing practices.

It could be argued, on the other hand, that this *ex post facto* recognition could contribute to achieving the objectives of the Act by encouraging the winning companies to continue to use and improve their quality practices. Also, by publicizing the achievement of the winners, this recognition could encourage other companies to adopt similar practices. That is, the legislation does not state that an objective of the national quality award program is to cause companies to practice effective quality management, but only requires that it encourage companies and other organizations in the United States to practice effective quality management in the provision of goods and services.

Conclusion 6

The Malcolm Baldrige National Quality Award program has failed to completely satisfy one of the principal objectives contained in the legislation: To disseminate information about the successful quality management strategies and programs, which provides specific guidance for other American organizations that wish to learn how to change their culture, manage for high quality, and achieve eminence. The failure to satisfy this objective is supported by the failure of

a majority of companies to meet one of the seven principal performance criteria of the Act. Although twenty five of the twenty eight winning companies provided information, only ten satisfied the criterion by providing information that other United States companies could use to change their culture, manage for high quality, and achieve eminence. Although the administrators of the MBNQA (NIST) provided information on all twenty eight companies, this information was limited to basic information, which was inconsistent in the coverage given to each of the winners, and to each winning company's quality practices. Also, this information does not provide specific guidance for other American organizations that wish to learn how to change their culture, manage for high quality, and achieve eminence.

Conclusion 7

Based on an analysis of the data developed from the documentation provided by the winners of the MBNQA from 1988 to 1996, it can be concluded that the Malcolm Baldrige National Quality Award has satisfied most of the objectives and criteria contained in the legislation. When examined against the strict constructionist proposition that the success of any legislation can be determined by comparing the objectives stated in the legislation with the observable results

of the implementation of the legislation, it can be concluded that the performance of the Malcolm Baldrige National Quality Awards program has been a qualified success.

Recommendations for Future Research

The results of the research and analysis in my PDE: "The Origins, Evolution, and Outcomes of the Malcolm Baldrige National Quality Award," indicate that there are several areas that would benefit from additional research, which were outside the scope of my PDE. Three of these areas are directly related to the findings of my PDE and would be extensions of the work covered in Paper 3: "The Performance of the Malcolm Baldrige National Quality Award: An Analysis of the MBNQA Against the Objectives and Criteria Contained in the Legislation (1988-1996)." Four of these areas of recommended future research, while still evaluating the performance of the MBNQA, would be parallel to the work covered in Paper 3.

Recommendations that would be extensions of Paper 3

Recommendation 1

Eighteen of the twenty eight companies failed to satisfy performance criterion 7. Why is it that a majority of the winners of the MBNQA do not produce and make available detailed information, which would be usable by other United States organizations to help them to change their culture and achieve eminence? And why is there such disparity in the information provided by these companies? Although the Analysis section of Paper 3 details what information was provided (or not provided) by each of the companies, and discusses the inadequacies of the information provided (or not provided), my research was not related to why there is so much disparity in the information provided by these companies, or the causes of this disparity.

Recommendation 2

What has been the impact of the failure of a majority of the winners of the MBNQA to produce and make available detailed information, which could be used by other United States organizations to help them change their cultures and achieve eminence? And what has been the impact of this failure, in terms

of the MBNQA program achieving its objectives? The Malcolm Baldrige National Quality Improvement Act states, *inter alia*, that the purpose of the Act is to provide for the establishment and conduct of a national quality improvement program under which information is disseminated about the successful strategies and programs. That a national quality award program of this kind in the United States would help improve quality by providing specific guidance for other American organizations that wish to learn how to manage for high quality by making available detailed information on how winning organizations were able to change their culture and achieve eminence. Although Paper 3 discusses these provisions of the legislation, and also discusses the failure of many of the winning companies to provide detailed information which could be used by other United States organizations to help them change their culture and achieve eminence, the scope of my research did not include an examination of the possible adverse impact that the failure of the winning companies to provide this information could have on the MBNQA program achieving its objectives.

Recommendation 3

To what extent has the MBNQA program encouraged companies to practice effective quality management in the provision of goods and services? To what extent has the MBNQA program simply provided *ex post facto* recognition to

companies that had already adopted effective quality management practices? As discussed in Paper 3, the Congress made it clear that companies would not be penalized from winning the award because they began their quality journey before the passage of the Act, and the wording of the legislation does not require a causal relationship between the Award program and the implementation of effective quality management practices. But from a practical point of view, when assessing the success of the MBNQA program, it would be useful to know if there is a causal relationship between the Award program and the implementation of effective quality management practices. If future research determined that, in some cases, there was no, or limited causal relationship between the Award program and the implementation of effective quality management practices, it would be useful to know what percentage of companies winning the award had been encouraged to practice effective quality management by the Award program, and what percentage had received *ex post facto* recognition.

Recommendations that would be parallel to Paper 3

There are also several other questions which would provide serious and substantive areas for future research, related to the performance of the MBNQA program, that were raised during the work on my PDE. These areas

of future research all relate to the performance of the MBNQA, albeit using different criteria than were used in my PDE. These questions for future research include:

(1) Have the winners of the MBNQA sustained, and continuously improved, the quality management practices that allowed them to win the award? Have these companies continued to prosper?

(2) Has the MBNQA program improved the national competitiveness of the United States?

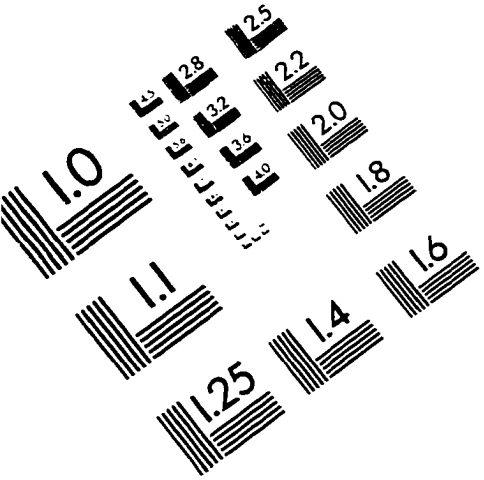
(3) Has the MBNQA program improved productivity in the United States?

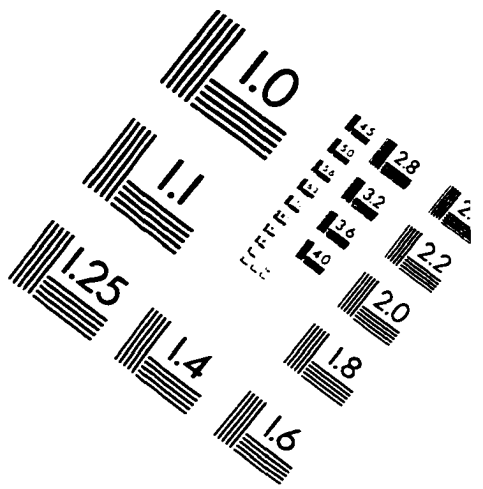
(4) Have the outcomes of the MBNQA had an impact on the global economy?

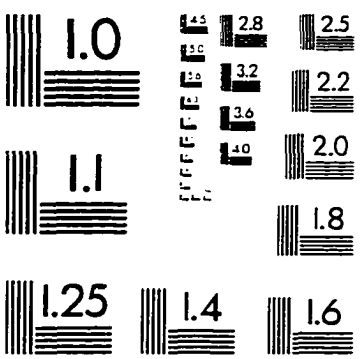
These four areas of future research, while still evaluating the performance of the MBNQA, would be parallel to Paper 3, rather than extensions of it. These areas would use Paper 2 as their point of departure, but (unlike Paper 3) they would be premised on the proposition that the success of the MBNQA program can be determined by its achievement of two of the objectives that drove the establishment of the legislation (rather than the objectives and criteria contained in the legislation), which were the improvement in the national competitiveness

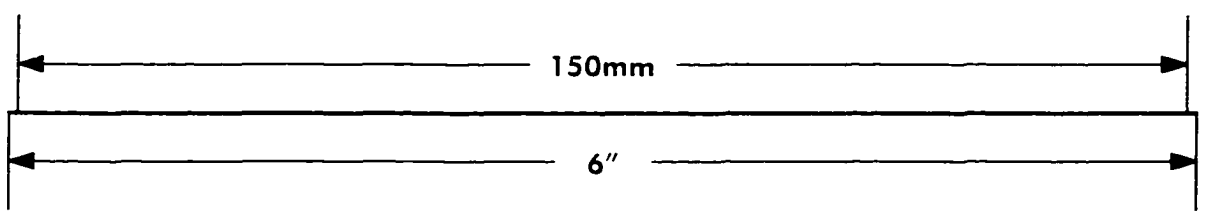
of the United States and improved productivity in the United States. These areas of research were outside the scope of Paper 3, which focused on the performance of the MBNQA in terms of the objectives and criteria contained in the legislation, and is premised on the strict constructionist proposition that the success of legislation can be determined by comparing the objectives stated in the legislation with the observable results of the implementation of the legislation.

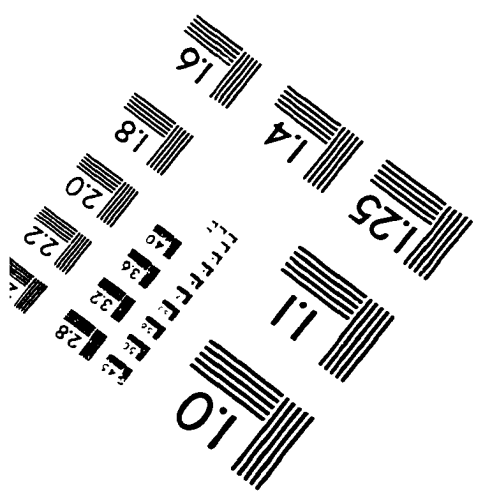
IMAGE EVALUATION TEST TARGET (QA-3)

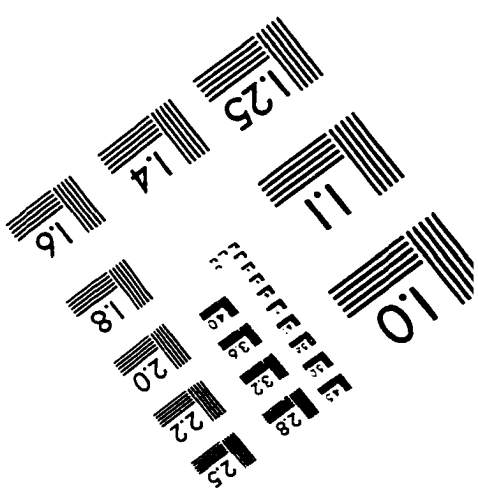












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