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The change to total quality: Phenomenological insights from corporate quality executives

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THE CHANGE TO TOTAL QUALITY: PHENOMENOLOGICAL INSIGHTS FROM CORPORATE QUALITY EXECUTIVES

by

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Abstract

THE CHANGE TO TOTAL QUALITY: PHENOMENOLOGICAL INSIGHTS FROM CORPORATE QUALITY EXECUTIVES

by

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The present dissertation research examines the concept of "total quality," which extends well beyond the traditional view of quality to include all key requirements to achieve quality excellence. Total quality adds to prior definitions of product quality and service quality a focus on process -- what actually transpires in organizations seeking to improve quality.

Implicit in the study of total quality is the need for a broad framework that encompasses multiple disciplines. The academic trend has been for scholars to study quality from a different vantage point, neglecting certain areas pertinent to the understanding of quality. In the discipline of marketing, for example, most of the academic literature focuses exclusively on understanding product and service quality. Comparatively less attention has been devoted to the conditions and processes that improve

product and service quality.

This research attempts to remedy the situation by examining the broader concept of total quality. The objectives of this research are twofold. First, this research provides a richer and more robust description of quality than currently exists. Second, this research contrasts companies just starting their quality improvement efforts with companies that are recognized for outstanding quality.

In-depth interviews were used to phenomenologically assess the characteristics that distinguish the two groups of organizations. High level executives were recruited from a broad range of U.S. organizations of industrial products, consumer products, services, and retail and wholesale distribution.

A series of open-ended questions examine six aspects of total quality: leadership, strategic quality planning, human resource utilization, quality assurance, quality results, and customer satisfaction. The final set of questions explore foreign competition and the Malcolm Baldrige National Quality Award.

This dissertation is of relevance and interest to both marketing scholars and practitioners. The information obtained from the interviews enables researchers to develop a more precise definition of total quality than currently exists. This facilitates theory development,

construct measurement, and eventually theory testing.

This study was exploratory and descriptive, and its findings offer potential for continuing research. These results can be used to develop hypotheses for quantitative testing, to refine survey methodology, and to improve questionnaire construction.

Thirty two research propositions are provided. The propositions offer the potential for extending research on total quality. Future research can be directed towards developing a measure of total quality and empirically testing these propositions.

This dissertation research has direct managerial implications. First, this research suggests that a quality orientation may be considered a sustainable competitive advantage. Second, this research highlights the factors that can be expected to foster or discourage total quality improvement efforts. Many of these factors are controllable by managers and therefore can be altered by them to achieve total quality excellence. Overall, this dissertation gives managers a comprehensive view of what total quality is, ways to achieve it, and its likely consequences.

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CHAPTER 1

INTRODUCTION

Today many U.S. companies view quality as "job one." Heightened interest in quality in corporations is attributed to such factors as foreign competition, rising customer expectations, coupled with a huge trade deficit. Most important, there is evidence to show that quality is the key to competitive success.

Intense and successful foreign competition has brought quality to the forefront of national concern. The Japanese focus on speedy incremental improvement, and on process more than product. The German approach is virtually the same. In contrast, the Americans invest in new product development, while devoting less attention to process improvement (Peters 1990).

Customer sensitivity to quality has risen over the years (Rice, December 3, 1990). The availability of quality imports has educated consumer tastes. American consumers have become skeptical of American products and services. Surveys, conducted between 1973 and 1983, found American consumers to be "not at all confident" that U.S.

industry could deliver quality (Garvin 1988).

The trade deficit is an indication of the deteriation of the U.S. competitive posture. Merchandise exports were $224 billion in 1986, the same as in 1980; imports over the same period rose nearly 50 percent, to $369 billion. In 1986, the U.S. trade deficit with Japan alone was $59 billion compared with just $10 billion in 1980. The U.S. experienced further deterioration in 1987, despite dollar depreciation.

Quality has become the key to competitive success. There is mounting evidence to indicate that quality is a powerful strategy for raising return on investment (ROI), increasing market share, improving productivity, lowering costs, and achieving customer satisfaction (Buzzell and Gale 1987; Deming 1982; Gale and Klavens 1985; Ishikawa 1985; Phillips, Chang and Buzzell 1983).

Pressures for quality improvement have intensified as a result of these factors. Quality has moved from a narrow focus on product quality control to a corporate emphasis applied to all business functions and employees. The concept of "total quality" takes a broader view than traditional definitions of quality to include all key requirements to achieve quality excellence.

The Malcolm Baldrige National Quality Award Program, administered by the Department of Commerce, has become a vehicle for achieving total quality. The program consists of seven categories: leadership, information and analysis, strategic quality planning, human resource utilization,

quality assurance of products and services, quality results, and customer satisfaction (1991 Malcolm Baldrige National Quality Award Application).

Though many organizations are using the total quality approach for self-assessment, quality system development, quality improvement, and strategic planning, the academic literature has neglected to study the approach. Considering that the concept of "total quality" is almost by definition multi-disciplinary, this comes as no surprise.

Implicit in the study of total quality is the need for a broad framework that encompasses multiple disciplines. Academic literature on quality has failed to review the subject extensively. The academic trend has been for scholars in four disciplines -- philosophy, economics, marketing, operations management -- to study quality from a different vantage point, neglecting certain areas pertinent to the understanding of quality (Garvin 1988). The result has been a host of competing perspectives, each based on different definitions, approaches, and analytical frameworks.

In the discipline of marketing, most of the academic literature focuses exclusively on understanding product and service quality. Marketing has thus taken a narrow view of quality. Comparitively less attention has been devoted to the conditions and processes (i.e., the companywide efforts in which every worker plays a critical

part) that improve product and service quality.

A better understanding of quality can be attained by intertwining multiple fields of study. To enhance the understanding of quality, scholars must treat quality as multi-disciplinary. Similar to corporations, where a well-executed quality approach involves the coordination of members in different departments, scholarly research in quality benefits from the integration of knowledge across disciplines.

This dissertation attempts to remedy the situation by examining the broader concept of "total quality." This adds to prior definitions of product and service quality a focus on process -- what actually transpires in organizations seeking to improve total quality.

The objectives of this dissertation are twofold. First, it provides a richer description of quality than currently exists. This dissertation employs qualitative methodology to examine both total quality and quality-related issues. A close examination of the academic literature reveals a lack of clear understanding of how various aspects of total quality are interrelated. This state of affairs suggests the appropriateness of an exploratory research design that prioritizes discovery over confirmation (Deshpande 1983; Kaplan 1964).

A series of open-ended questions examine six aspects of total quality: leadership, strategic quality planning, human resource utilization, quality assurance, quality results, and customer satisfaction. The final set of

questions explore two rather controversial issues: foreign competition and the Malcolm Baldrige National Quality Award.

This dissertation pays little attention to the information and analysis category of the Malcolm Baldrige National Quality Award. The qualitative approach used here is designed to explore in-depth feelings, opinions, concerns, and practices of managers. It does not aim at simplification or measurement (Templeton 1987).

The information and analysis category examines the scope, validity, use, and management of data and information that underlie the organization's overall quality management system. This category also examines the adequacy of the data, information, and analysis to support the company's overall quality objectives. Given this, the information and analysis category was not examined here (1991 Malcolm Baldrige National Quality Award Application).

Second, this dissertation contrast companies just starting their quality improvement efforts with companies that are recognized for outstanding quality. In-depth interviews were used to phenomenologically assess the characteristics that distinguish the two groups of organizations. High level executives were recruited from a broad range of U.S. organizations of industrial products, consumer products, services, and retail and wholesale distribution.

CHAPTER 2

AN EXPANDING VIEW OF QUALITY

Marketing scholars have focused predominantly on understanding final product and service quality output, often referred to as Small Q (e.g. Buzzell and Gale 1987; Garvin 1988; and Zeithaml, Parasuraman, and Berry 1990). Much less attention has focused on organizational processes.

However, achieving the highest levels of quality requires an added focus on process. Beyond improving product and service attributes (i.e., output), improvements in quality come from reducing errors and defects, improving responsiveness and cycle time performance, and improving efficiency and effectiveness of all resources in an organization (1991 Malcolm Baldrige National Quality Award Application).

Thus, a better understanding of quality requires that companies address total quality, or Big Q. Total quality embraces both process and output. Essentially, total quality can be defined as a broad approach to quality including product and service quality, but

extending well beyond to address all facets of an organization that affect customer satisfaction.

In marketing, and other disciplines, scholars have neglected to study total quality. Given that the study of "total quality" requires a multi-disciplinary approach, this comes as no surprise. The purpose of this chapter is to review the literature on quality, drawing primarily from three disciplines: marketing, organizational behavior, and operations management.

SMALL Q

Small Q is a narrow view of quality that focuses on output only.

PROGRAMS OF SMALL Q

In past years, Small Q focused on manufacturing. Traditional programs of Small Q have progressed through three stages: inspection, statistical process control, and reliability engineering.

Inspection

While attention to quality has risen in recent years, the embryonic elements of quality date back to century-old practices of skilled artisans. In the U.S., the discipline spawned in 1789, when Eli Whitney, the inventor of the cotton gin, had the brilliant idea to mass produce markets through the use of interchangeable parts. Whitney provided the U.S. government with guns so identical so that they can be easily repaired with

interchangeable parts. While Whitney's idea was sound, his mass-produced parts were not precise enough to fit together. Unfortunately for Whitney, the first tools for precision manufacturing, gages and formal inspection, did not appear until the 1820s (Quality Progress May 1986).

In the early 1900s, quality control was limited to inspection. Quality control sprung as a means of ensuring consistency among parts so that different plants of a single corporation would have the ability to interchange them. This was achieved by inspecting 100 percent of all output (Hart and Casserly 1985).

An Independent Function

In the heydays of the industrial revolution, quality control was an independent function, known as inspection. Frederick W. Taylor, the father of scientific management, gave the function added legitimacy. He reasoned that if business was divided into discrete functional areas, and each was headed by experts, the result would be an effective industrial work force.

A Responsibility of the Quality Department

One of the more prestigious functional departments that flourished during the industrial revolution was inspection. Its primary responsibility was to evaluate manufactured products to determine whether or not they were acceptable; then ship the acceptable products and repair or scrap the remainder. As Bakken noted (1990),

> The inspection crew also became the police force ferreting out production operators and production management who were not properly motivated towards high quality.

Statistical Quality Control

Statistical quality control is a rigorous, scientific method of identifying the quality and productivity that can be expected from a given production process in its current form so that control of both attributes can be built in the process itself. It can quickly recognize malfunctions and point to their occurance.

Statistical quality control quickly identifies the impact of any change on the performance of the entire process. It further identifies where, and often how, the quality and productivity of the entire process could be continuously improved. The appellation for this was the "Shewhart Cycle," followed by the "Deming Cycle"; currently it is Kaizen, the Japanese term for continuous improvement (Drucker 1990).

Walter Shewhart

Walter Shewhart, a Bell Laboratory physicist, introduced the concept of statistical quality control: the notion of only inspecting a random sample of output to ensure an acceptable level. The beginning of quality technology was marked when Shewhart first applied statistical concepts to production (Drucker 1990). Shewhart developed statistical process control, which was later refined by W. Edwards Deming.

Detecting Problems. Variability was recognized as an inevitable fact of industrial life, which could be understood using the principles of probability and statistics. Shewhart observed that not all goods produced by a work process were exactly alike. He developed quality control charts to spot "special" causes of variation quickly for corrective action to be taken (Xerox 1987).

Sampling. Statistical quality control can be accomplished using a small sample to enable machine operators to report malfunctions almost immediately and to make corrections in real time. Sampling techniques are based on the assumption that 100 percent inspection is an inefficient way of sorting quality products from non-quality products. Risks are involved, since sampling is never fully representative. A production lot could be accepted, when in reality it consists a many defective products. Similarly, a product lot of perfectly acceptable quality could be rejected (Garvin 1988).

Sampling plans were developed for dealing with these problems systematically. They ensured that for a given level of defects, the probability of unwittingly accepting an unsatisfactory lot would be limited to a certain percentage (Juran and Gryna 1980). Several items would be checked for a specified lot size. When the sampling table would show the number of defects in that group to exceed the number allowable, the entire lot would be rejected (Garvin 1988).

Useful as it was, this method could only be applied to individual production lots, rather than to the overall level of quality produced by a manufacturing process. The average outgoing quality limit (AOQL) was developed to overcome that limitation. AOQL showed the maximum percentage of defective units that a process would produce when: sampling by lots; and, seperating good from bad items in all lots that had already been rejected on the basis of sampling (Dodge 1944).

Reliability Engineering

Reliability engineering is a branch of quality that relied heavily on probability theory and statistics. It focused on the assurance of acceptable product performance over time, and the prevention of defects. Reliability engineering emphasized attention to quality throughout the design process (Garvin 1988).

An effective reliability program required managers to monitor field failures closely to give engineers the information needed to plan new designs. Effective field reporting also demanded the development of systems of data collection, including return of failed parts to the laboratory for testing and analysis (Garvin 1987).

Robust Design

Robust design allows considerable variation in parameters of components without degrading performance. The impact of combining robust design with methods that reduce process variation is a dramatic reduction of defects in

manufacturing (Electronic Business October 15, 1990).

Genichi Taguchi

Robust design is closely tied to the work of Genichi Taguchi, a prize-winning Japanese statistician. His specialty is product and process design that couples design with production.

Taguchi Methods. Taguchi developed several methods that link design with production. "Design of experiments," for example, focuses on building a cooperative relationship between design and manufacturing engineers. This method combines statistical methods with engineering, enabling a company to achieve improvements in cost and quality by optimizing product design and manufacturing processses.

The second method, "quality loss function," determines the costs of variations from target values. It aims to reduce variation and find near-optimum operating levels with just a few designed experiments, even though many variables may be involved and relationships may be nonlinear.

Taguchi's third method is the "signal-to-noise ratio," which facilitates engineers in the detection of problems in the early phases of product development and indicates whether low-cost improvements can be made (DeYoung October 16, 1989).

DEFINITIONS OF SMALL Q

Though much has been said and written on Small Q, the concept is frequently problematic. In colloquial speech, Small Q can be interpreted differently, depending on the context. To compound the problem, a host of Small Q definitions were invented by quality gurus and experts. These definitions are discussed here.

Philip Crosby

Philip B. Crosby, chairman of Philip Crosby Associates, Inc., speaks of quality as "conformance to requirements" (Crosby 1979). He believes that any product or service that consistently reproduced its design specifications was of high quality. According to Crosby, a Pinto that met Pinto requirements was as much a quality product as a Cadillac that conformed to Cadillac requirements (March and Garvin 1986).

Joseph M. Juran

Joseph M. Juran, chairman emeritus of the Juran Institute, defines quality as "fitness for use" meaning that the users of a product or service should be able to count on it for what they needed or wanted to do with it. Juran was one of the first quality experts to show interest in the details of quality. "Fitness for use" consists of five dimensions: quality of design, quality of conformance, availability, safety, and field use (Juran and Gryna 1980).

Armand V. Feigenbaum

Armand V. Feigenbaum, president and chief executive officer of General Systems Co., defines quality from the perspective of the customer. According to Feigenbaum, "Quality isn't specifications, or what the advertiser or engineers say it is. It's what the buyer says it is" (DeYoung October 16, 1989).

Remedying the Situation

Quality experts fail to agree on a single definition of quality that satisfies everyone. A lack of agreement on quality definitions can lead to breakdowns in communication. To communicate more efficiently, companies like Xerox have developed their own specialized language of quality, containing terms with definite meanings (USMG 1988).

FIVE APPROACHES TO DEFINING SMALL Q

Small Q can be viewed from varying perspectives. Traditionally, Small Q had been associated with its historical roots in manufacturing. Though in recent years, Small Q has become synonymous with product and service quality, given that the focus remains output.

Garvin (1988) identifies five approaches to defining Small Q: (1) the transcendent approach of philosophy; (2) the product-based approach of economics; (3) the user-based approach of economics, marketing, and operations management; and (4) the manufacturing-based and (5) value-based approaches of operation management.

The Transcendent Approach

The transcendent view of Small Q is rooted in philosophy. The approach equates quality with "innate excellence." Small Q is assumed to be absolute and universally recognizable, a mark of both uncompromising standards and high achievement. An implicit assumption here is that there is something timeless and enduring about Small Q. The transcendent view claims that Small Q cannot be defined precisely, that it is a simple, unanalyzable property, recognized through experience. Examples include art, music, and literature.

The Product-Based Approach

The product-based approach of Small Q has its origins in economics. Product-based definitions view Small Q as a precise and measurable variable. Discrepencies in quality reflect differences in ingredients or attributes of the product. The use of 24K gold for tooth fillings is illustrative.

The User-Based Approach

The user-based approach is rooted in marketing. It is an approach that embraces the marketing concept. The user-based approach, and the marketing concept, both begin with the customer. According to the user-based approach, individual consumers have different wants and needs, and the goods that best satisfy their preferences are the ones they regard as having the highest quality.

The user-based approach is an idiosyncratic, subjective, and personal view of quality, where differences in ingredients or attributes of a product reflect differences in the buyer's assessment of quality. In marketing, the user-based approach has led to the notion of "ideal points:" precise combinations of product attributes that provide the greatest satisfations to a specified consumer (Garvin 1988). Haagen-Daz and Coca-Cola are examples.

The Manufacturing-Based Approach

The manufacturing-based approach defines quality from the perspective of engineers and manufacturers as: "conformance to requirements" (Crosby 1979). Any deviation from design or specification implies a loss in quality. While the manufacturing-based approach recognizes the consumer's interest in quality, its focus is internal. Small Q is defined to simplify engineering and production control. In these terms, a well-made automobile and appliance that conform to requirements are of high quality. In service settings, conformance refers to accuracy or timeliness (Garvin 1988). Tallied bank balances and airlines that arrive and depart on schedule are examples (Langevin 1977).

The Value-Based Approach

The value-based approach is associated with operation management. Here, Small Q is defined in terms of costs and prices. A quality product is thereby

regarded as providing performance at an acceptable price or conformance at an acceptable cost. A $500 running shoe, for example, no matter how well constructed, is not considered to be a quality product, simply because the price is unacceptable.

A 1983 Consumer Network survey of consumer perceptions of quality in twenty-eight product categories suggests the value-based approach as becoming prevalent. The study indicates in product categories such as food, clothing, personal care, and beauty products, the key quality indicators to be ingredients and materials. While these reflect a product-based approach to the subject, the overall conclusion shows quality as likely to be discussed and perceived in relationship to price.

Implications of Multiple Perspectives

Companies that successfully compete in today's global marketplace view quality from multiple perspectives for achieving agreement on quality standards. Multiple perspectives result in: less conflict and improved communication and coordination among departments, higher quality products, and fewer problems in product introduction (Garvin 1988).

A Reconciliation?

Viewed independently, each approach is narrow and incomplete. Given that success in achieving high quality requires more than a single perspective, it is necessary

to reconcile the different views. Various approaches for measuring Small Q can only partially reconcile the differences in definitions.

A reconciliation is possible through "total quality," which is described in detail in the latter part of this chapter. Suffice to say, "total quality" is a comprehensive approach which manages to reconcile the different views of quality by pulling them together under one management umbrella.

MEASURING SMALL Q

There are as many ways to measure quality as there are definitions. Measures of quality can be contrasted in at least fours ways: (1) objective or subjective; (2) relative or absolute; (3) timeless or socially determined; and, (4) external or internal.

Objective Versus Subjective Measures

Objective measures examine quality by asking respondents factual questions concerning the quality of the product or service under study. Based on the responses, Small Q is measured. **Subjective measures** examine quality by asking respondents to present an idiosyncratic and personal view of the product or service quality under study.

Relative Versus Absolute Measures

Relative measures rank Small Q attributes, relative to those of its principal competitors. **Absolute measures**

rank Small Q attributes against an established benchmark.

Timeless Versus Socially Determined Measures

Timeless measures focus on Small Q attributes that are consistent, unaffected by fashion. **Socially determined measures** focus on Small Q attributes that shift over time; thereby, affected by fashion.

External Versus Internal Measures

External measures focus on customer-perceived quality, linking Small Q to value and customer satisfaction. **Internal measures** focus on statistical quality control and conformance to specification; thereby, assessing Small Q from a quality assurance point of view (Gale and Klavens 1985).

APPROACHES FOR MEASURING SMALL Q

The five perspectives can be partially reconciled through various approaches for measuring Small Q. Most measures of Small Q can be organized into three categories: (1) customer-perceived quality measures, (2) value measures, and (3) generic measures.

Customer-Perceived Quality Measures

The Profit Impact of Market Strategies (PIMS) studies conducted by the Strategic Planning Institute (SPI) focus on customer-perceived quality (Buzzell and Gale 1987; Gale and Buzzell 1989). The PIMS process for assessing the relative perceived quality of a business unit's products and services involves five key steps.

First, a meeting is held, in which a multifunctional team of managers and staff specialists identify non-price product and service attributes that affect customer buying decisions. Consider for example, an office equipment product, where quality can include durability, maintenance costs, flexibility, credit terms, and appearance (Buzzell and Gale 1987),

Second, the team is asked to assign "important weights" for each attribute representing their relative importance as influences on customer purchase decisions. The sum of these weights totals 100. For markets in which there are important segments with different importance weights, seperate weights are assigned to each segment.

Third, the management team rates its business unit's product line, and those of leading competitors, on each of the performance dimensions identified in Step 1. From these attribute-by-attribute ratings, each weighted by its respective importance weight, an overall relative quality score is constructed.

Fourth, the overall relative quality score and other measures of competitive position (i.e., relative price, and market share) and financial performance (ROI, ROS, and IRR) are validated against benchmarks based on the experience of "look-alike" businesses in similar strategic positions in order to:

1. Check the internal consistency of strategic and financial data.

2. Confirm the business and market definition.

Fifth, the management team tests their plans and budgets for reality, develops a blueprint for improving market perceived quality relative to competitors', and calibrates the financial payoff.

In many cases, the judgmental ratings assigned by the management team are tested -- and, when appropriate modified -- by collecting ratings from customers via field interviews.

The PIMS approach to assessing relative quality is similar to the "multi-attribute" methods used in marketing research. These methods are, however, used primarily for evaluating or comparing individual products (actual or perspective), while PIMS scores apply to a business unit's entire product line.

Proponents of PIMS argue that superior customer-perceived quality leads to stronger customer loyalty; more repeat purchases; less vulnerability to price wars; ability to command higher relative prices without affecting share; lower costs; and, share improvements. Moreover, businesses that have both larger share and better quality than their leading competitors earn ROIs that are dramatically higher than those of businesses with small share and inferior quality.

The customer-perceived quality measure examines quality from the perspective of customers. Given that this measure only recognizes the user-based approach to

defining quality, it fails to reconcile the five approaches to defining Small Q.

Value Measures: Price/Quality Tradeoffs

Value measures use quality/price tradeoffs to determine value. Academic studies have used list/selling prices as measures of price, and PIMS and Consumer Reports or Consumer Research rankings as measures of quality. Companies like Westinghouse have developed their own measures of value.

PIMS Value Measure

The PIMS' value measure is the relationship between customers' perceptions of product performance and price relative to competitors (Gale and Klavens 1985). The two components of the PIMS value measure are: (1) customer-perceived quality (see p. 19), and (2) price. The price-quality relationship indicates to customers whether the product's price and performance offer more value than competing products; thus, making it a more desirable buy.

Consumer Reports

Several correlation studies have employed Consumer Reports or Consumer Research rankings as measures of quality. Value is determined by the quality/price ratio of a product as it relates to competition.

Generally, quality rankings have been based on performance, durability, or aesthetics. In all cases, individual brands were ranked by technical experts who

first subjected each brand within a product category to evaluative tests an then assigned points based on the result. Some measures are quite objective, while others rely more on the judgement of testers.

The Consumer Reports' measure has both strengths and weaknesses. Strengths include: the use of objective measures of performance, the employment of experienced product testers, and the assessement of key quality dimensions to consumers. The Consumer Report measure has been criticized for being highly aggregated to provide meaningful results, as well as failing to include dimensions that are of critical importance to users and to make explicit the weighting scheme used to create overall rankings (Garvin 1988).

Westinghouse, the Value Edge Concept

Some companies employ in-house measures of quality. Westinghouse, for instance, has created the Value Edge Concept for measuring customers' perceptions about the **value** of products and services offered by all competitors. The value concept is based on customer perceptions, where each customer has perceptions of which competitor has the Value Edge.

According to the Westinghouse staff, customers buy benefits, rather than products or services. Interestingly, Theodore Levitt (1960), a distinguished marketing scholar, expressed similar ideas three decades ago in his landmark article Marketing Myopia. Benefits result from

function, the key concept in Value Analysis, and functions can be categorized by (1) Use function and (2) Esteem function. The Westinghouse staff illustrate: "What is the Use function of an automobile? ...

> Transport (verb) people (noun)" might be an acceptable definition. However, it is widely recognized in a consumer product, such as an automobile, that there are many **Esteem** functions as well as **Use** functions. For industrial products, we frequently have more difficulty identifying Esteem functions. In the Value Edge process, all functions performed by a product or service which are not Use functions are categorized as Esteem functions. Value is the customer's perceptions of the sum of use plus esteem functions (Westinghouse Productivity and Quality Center 1990).

Value measures examine quality in terms of costs and prices while viewing quality from the perspective of the customer. Given this, value measures manage to partially reconcile Small Q by recognizing both the user-based approach and the value-based approach to defining quality.

Generic Measures

The third approach to measuring quality is based on generic dimensions. Most popular are (1) the product quality framework of eight dimensions (Garvin 1988), and (2) the service quality framework of five dimensions (Zeithaml, Parasuraman, and Berry 1990).

Product Quality Framework

For decades Small Q was defined narrowly. Garvin (1984) sought to widen the definition of Small Q, for "...Quality is not a single, recognizable characteristic;

rather, it is multifaceted and appears in many forms." Garvin points out, "much can be learned by treating quality in a less homogeneous fashion (Garvin 1984).

Garvin (1988) identifies eight elements of Small Q: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. Exhibit 1 summarizes this framework.

The eight dimensions only partially reconcile the five approaches described earlier. Each of Garvin's five approaches to defining quality emphasizes different dimensions of quality: the product-value appoach focuses on performance, features, and serviceability; the user-base approach focuses on aesthetics and perceived quality; and the manufacturing-based approach focuses on reliability, conformance, and durability.

While these eight dimensions offer direction on how to compete (Garvin 1984), a focus on Big Q is required to achieve a competitive advantage in today's global marketplace. Achieving competitiveness requires that companies define customer requirements and focus their efforts on meeting them. Accomplishing this requires that marketers, designers, engineers, and strategists work closely together in cross-functional teams from product conception to end results to design products or services that reflect customers' desires and tastes (Hausing and Clausing 1988).

Garvin's framework is problematic. Some of the dimensions complement one another, while others appear to

overlap. This suggests the need for aggregating such elements of quality as performance and features. Multivariate statistics can be employed to collapse the concept of quality into fewer dimensions than eight.

EXHIBIT 1

EIGHT DIMENSION OF PRODUCT QUALITY

Dimensions	Definition
Performance	Primary product characteristics.
Features	"Bells and whistles," secondary product characteristics.
Reliability	Frequency of failure.
Conformance	Match with specifications.
Durability	Product life.
Serviceability	Speed of repair.
Aesthetics	"Fits and finishes."
Perceived quality	Reputation and intangibles.

Service Quality Framework

According to the Texas A&M researchers, Zeithaml, Parasuraman and Berry (1990):

> Service quality, as perceived by customers, can be defined as the extent of discrepency between customers' expectations or desires and their perceptions.

These researchers developed the SERQUAL instrument for measuring customers' perceptions of service quality, which

consists of five determinants of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Exhibit 2 summarizes this framework.

Achieving a competitive advantage through superior service requires more than an understanding of the determinats of service quality. Zeithaml, Parasuraman and Berry (1985) formulated a service-quality model that highlights the main requirements for delivering the expected service quality. Through the service-quality model and the five determinants of service quality, companies can improve service quality and sustain competitiveness. The service-quality model is discussed later in the section, "Approaches for measuring Big Q."

EXHIBIT 2

FIVE DIMENSIONS OF SERVICE QUALITY

Dimensions	Definition
Tangibles	Appearance of physical facilities, equipment, personnel, and communication materials.
Reliability	Ability to perform the promised service dependably and accurately.
Responsiveness	Willingness to help customers and provide prompt service.
Assurance	Knowledge and courtesy of employees and their ability to convey trust and confidence.
Empathy	Caring, individualized attention the firm provides its customers.

An Incomplete View

The three measures of Small Q only partially reconcile the five perspectives of quality. Achieving high quality requires that companies view quality from multiple perspectives. Given that quality is judged by the customer, an operational concept of quality has to begin with the customer's perception of quality. The relevant dimensions of customer-perceived quality can then be internally operationalized and translated into product and service standards.

TRANSFORMING SMALL Q INTO BIG Q

Three American gurus are credited for the transformation of Small Q into Big Q: W. Edwards Deming, Joseph M. Juran, and Phillip B. Crosby.

W. EDWARDS DEMING

W. Edwards Deming's approach to quality management extended well beyond Small Q. He delineated the role of top management in the quality process.

A Management Responsibility

Deming urged top management to become actively involved in the organization's quality improvement efforts. He viewed quality as "... the [company] president's responsibility" (DeYoung October 16, 1989). Deming believed that if management committed itself to quality, productivity and quality would improve. Contrary

to the traditional thought, which viewed quality and productivity as trade-offs, Deming reasoned that productivity was a by-product of quality and doing the job right the first time (Deming 1982).

In Deming's view, 85% of all quality errors are attributed to management and its systems; 15% of all quality effors are resulting from the work force. Given that management was responsible for the majority of quality problems, management had to take the lead in changing the systems and processes that created those problems (March and Garvin 1986).

Top management had to become committed to the pursuit of quality as a corporate goal, and to adapt a philosophy of continuous improvement. Management had to be responsible for building quality in, breaking down barriers between departments, improving processes, instituting a program of education and training, creating an environment of trust, and so forth.

14-Point Program

Deming's (1982) program of quality consists of 14 points. Deming's words are in bold headings. The remainder of each paragraph summarizes his views.

1. **Create constancy of purpose for improvement of product and service.** Management must adopt a long term view, and put aside their proccupation with the short term. This requires continuous improvement in all areas to best meet the needs of customers and to stay ahead of competition.

2. **Adopt the new philosophy.** Management must accept the challenge, learn its responsibilities and take on leadership for change.

3. **Cease dependence on mass production.** Mass inspection must be eliminated; it is ineffective and costly. Eliminate inspection by improving processes. Building quality in.

4. **End the practice of awarding business based on price.** Price is meaningless without a measure of the quality being purchased. Therefore, management must establish new guidelines to change the job of purchasing. Companies must work with fewer suppliers, build on long-term relationship of loyalty and trust. Purchasing must be equipped with the necessary statistical tools to judge the quality of vendors and purchased parts. Both purchasing and vendors must understand specifications, and know how the material is to be used in production, and by the ultimate customer (March and Garvin 1986).

5. **Constantly and forever improve the system of production and service.** Unnecessary costs must be reduced and quality improved in every activity. Improvements come from studying the process.

6. **Institute modern methods of training on the job.** Through training, workers must be given clear standards of acceptable work, as well as the tools needed to achieve it.

7. **Institute modern methods of supervising.** Supervisors must be empowered to do a better job. Barriers that prevent workers from doing their jobs must be removed.

8. **Drive out fear.** Fear stiffles good work. Workers must not be afraid to ask questions, to report problems, to make mistakes, or to express ideas.

9. **Break down barriers between departments.** Workers different departments must work as a team to forsee problems in use of a product or service. Multi-disciplinary quality-control circles can lead to improved design, service, quality, and costs.

10. **Eliminate numerical goals for the work.** Slogans, exhortations, targets, pictures, and posters for the work forces, urging new levels of productivity must be eliminated.

11. **Eliminate work standards and numerical quotas.** Quotas do not focus on quality. Instead, quotas focus on quantity, resulting in poor quality and higher costs.

12. **Remove barriers that hinder the hourly workers.** Eliminate any barriers that hinder pride in work. Change the responsibility of workers from numbers to quality.

13. **Institute a vigorous program of education and training.** Employees must received the education and training to improve quality and productivity.

14. **Create a structure in top management that will push every day on the above 13 points.** Everyone in the organization must work to accomplish the transformation.

Process Improvement

Deming offered two means of process improvement; first, changing the "common causes" that were systematic, and, second removing the "special causes." Common causes, for example, included poor product design, machines out of order, poor physical conditions, and so forth. Special causes, in contrast, consisted of lack of knowledge or skill, worker inattention, poor lot of incoming materials, and so on. Management was responsible for common causes, whereas the work force was responsible for special causes. The key tool for discriminating between systematic and special causes was statistical process control (Garvin and March 1986).

Prevention

Deming advocated prevention by using quality control charts all along the production line, rather than just inspecting the end. Besides control charts, sampling

techniques had been developed to provide a scientific basis on which to accept or reject produc-tion lots based on a limited number of units. While sampling and control charts could indicate problems, they could not by themselves identify their causes.

Deming Cycle

Deming encouraged management to adopt a systematic approach to problem solving, referred to as the Deming cycle. Deming's approach consists of four phases: Plan, Do, Check, Action (PDCA).

Plan - change specific inputs for potentially superior results.

Do - conduct an experiment of pilot of the planned change.

Check - use data to determine if product or service is actually improved.

Act - expand the application if successful or start anew if results prove otherwise.

Once a new level of accomplishment is achieved, the cycle begins all over (Bakken 1990).

Deming's Influence in Japan

Deming was the first of the gurus to arrive in Japan to introduce statistical quality control and market research techniques. His concepts proved instrumental in rebuilding Japan's war-battered industries. Deming was invited to Japan by the Union of Japanese Scientists and Engineers (JUSE) to present an eight-day seminar on

quality control in 1950; his ideas for using statistical methods to analyze and improve a company's operations were so well received that he returned again in 1951 and 1952. Deming's ideas spread throughout Japan. The Japanese have honored his contributions by naming the Deming Prize after him (Ishikawa 1985).

JOSEPH M. JURAN

Compared to Deming, Juran placed less emphasis on statistical aspects of quality management. Juran focused on leadership, planning, organizational issues, and setting goals and targets for improvement (Juran 1951).

Costs of Quality

Until the 1950s, the main reason for improving quality was to reduce the costs of defects. In numerical terms, however, what these defects amounted to was a matter of conjecture. The truth is that few companies actually bothered to calculate these costs because products were not built right the first time. Though without a yardstick for tallying up the expenses, one question remained unresolved: How much quality is enough? (Garvin 1988).

Juran tackled the question of "How much quality is enough?" in the first edition of his Quality Control Handbook, a publication that would be later recognized as the quality control bible (Juran 1951).

Juran observed that the costs of achieving a given level of quality could be understood in terms of two types

of costs: avoidable and unavoidable costs. First, avoidable costs consisted of defects and product failures, scrapped materials, labor hours required for rework and repair, complaint processing, and financial losses resulting from unhappy customers. Second unavoidable costs included costs associated with prevention, inspection, sampling, sorting, and other quality control activities.

Juran insisted that failure costs could be reduced sharply by investing in quality improvement. The payoff from such efforts could be substantial: Juran estimated avoidable quality losses to be in the range of $500 to $1000 per productive operator per year: a considerable sum in the 1950s (Juran 1951).

Juran provided managers with an approach for estimating investments in quality improvement. As long as failure costs remained high, additional expenditures on prevention were likely to be justified. Moreover, decisions made early in the production chain had implications for the level of quality costs incurred later on, in both factory and the field (Garvin 1988).

Fitness for Use

Juran defined quality as "fitness for use," from the viewpoint of the user, not the manufacturer. Juran broadened the traditional definition of Small Q. Fitness for use consisted of five dimensions: quality of design, quality of nonconformance, availability, safety, and field use. Juran maintained that the basic mission of a company

is "to make products which meet the needs of the user." By defining users to include al the individuals involved with a product from beginning to end, Juran managed to transform Small Q into Big Q.

Achieving fitness for use required that Juran develop a comprehensive approach to quality, which spanned over a product's entire life, beginning with design up to field service. Approaches were proposed to specify and quantify the impact of each stage on the various elements of fitness for use. A wide array of statistical techniques facilitated the analysis (March and Garvin 1986).

Juran's Breakthrough Sequence

Juran's approach to reach and maintain cost of quality consisted of three stages: breakthrough projects, the control sequence, and annual quality programs.

In the initial stages, there can be significant opportunities for breakthrough projects, aimed at chronic problems. The "breakthrough sequence" involved Pareto analyses, identifying the "vital few" from the "trivial many." Pareto analysis can help to establish priorities by focusing on the major issues and not focusing too much on the trivial many. A widely cited example of the Pareto principle is the "80-20 rule:" Eighty percent of the business comes from 20% of the customers (Xerox 1986)

Following successive breakthrough projects, a firm reached the point of optimal quality. During this stage, an organization employed the control sequence to preserve

its gains. Another use for the control sequence was to attack sporadic problems, including sudden, usually dramatic changes in the status quo. Both breakthrough projects and control processes required sophisticated analysis and statistics.

The annual quality program was Juran's major vehicle for top management involvement. It gave top management quality objectives and was instrumental for internalizing quality improvement as an on-going process to prevent complacency from occuring (March and Garvin 1986).

A Focus on Leadership and Massive Training

Many of Juran's points address facets of Big Q. Juran viewed education and training as a prerequisite of quality. He believed that the entire management of a company has to be trained in quality. According to Juran, senior management had to give overall leadership and support to quality improvement.

Juran's Influence in Japan

Like Deming, Juran's teachings were better received initially in Japan than in the United States. In 1954, Juran was invited to Japan by the JUSE. Juran lectured to Japanese top- and mid-level executives on the managerial aspects of quality control (Ishikawa 1985). His ideas focused on planning, organizational issues, management's responsibility for quality, and the importance of setting goals and targets for improvement (Juran 1951).

Together both Deming and Juran contributed heavily to the quality process in Japan after World War II.

PHILLIP B. CROSBY

Philip B. Crosby focused on changing corporate culture, rather than statistical tools. Like Deming and Juran, Crosby stressed the role of leadership.

Conformance to Requirements

Crosby's message was directed at top managers. He sought to change top management's perceptions and conventional attitudes about quality. While top managers had typically viewed quality as intangible or else to be found only in high-end products, Crosby spoke of quality as "conformance to requirements." He believed that any product that consistently reproduced its design specifications was of high quality (Crosby 1979).

Quality is Free

Crosby emphasized the notion of "cost of quality." Crosby argued that American managers must pursue quality to compete. He believed that quality improvements result in lower costs, and thus higher profitability. His reasoning led to Crosby's popular phrase and the title of the best selling book Quality Is Free (Crosby 1979).

Zero Defects, A Management Standard

The ultimate goal of quality improvement was zero defects to be achieved through prevention, in contrast to after-the-fact inspection. Crosby elaborated on this

approach in emphasizing the role of management. He believed that the key to quality improvement actually amounted to a change in top management's orientation. Crosby went as far as to argue that zero defects was a management standard and not simply a motivational program for employees (March and Garvin 1986).

While Crosby had defined quality as "conformance to requirements," or Small Q, he also addressed aspects of Big Q. Crosby stressed the leadership role of top management. He believed that top management had to become convinced of the need for quality improvement and to make the commitment clear to the entire company. Crosby focused on changing corporate culture, raising quality awareness among employees, recognizing achievements of quality goals, and so forth.

BIG Q

The concept of "total quality" is often referred to as Big Q, a label that indicates its broader implications for management. Big Q focuses on process and output, whereas Small Q focusses solely on the latter. Total quality incudes product and service quality, but extends well beyond to include all companywide activities that foster customer satisfaction.

PROGRAMS OF BIG Q

Achieving high levels of total quality, or Big Q, requires a total quality program to continuous improvement

of all operations and activities throughout an organization. Current programs of Big Q have progressed through three stages: total quality control, companywide quality control, and total quality management.

Total Quality Control

Total Quality Control is characterized as "a broad approach to quality, including product quality but extending well beyond to virtually everything done by an organization for external as well as "internal" customers within the same organization (what marketing does for manufacturing, for example). Continuous improvement is sought toward measurable, ever-more-difficult quality targets" (Electronic Business October 16, 1989).

Armand V. Feigenbaum

Armand V. Feigenbaum, a distinguished engineer, pioneered "total quality control" in his classic Harvard Business Review article (Feigenbaum 1956). He is author of Total Quality Control, one of the early texts on quality improvement (Feigenbaum 1983). Feigenbaum spoke of "total quality control" as "an effective system for integrating the quality development, quality maintenance, and quality improvement efforts of various groups in an organization so as to enable production and service at the most economic levels which allow for full customer satisfaction.

Everybody's Job. "The first principle to recognize

is that quality is everybody's job," says Feigenbaum (Feigenbaum 1956). High quality products were unlikely to be produced if quality becomes the sole responsibility of the manufacturing department.

Interfunctional Teams. Feigenbaum found all new products, as they progressed from design to market, to be involved in similar activities. To ensure success, these activities required the cooperation of multiple departments through "interfunctional teams." These teams shared the responsibility for all phases of design and manufacturing and would disband only when they had placed a product in the hands of a satisfied customer, who remained satisfied (Garvin 1987). They also ensured that diverse viewpoints were represented and that otherwise autonomous departments worked together (Garvin 1988). Top management was ultimately responsible of the effectiveness of the system.

A New Quality Professional. Feigenbaum and Juran expanded quality far beyond statistics. While statistics was important, both experts felt it was not enough. The quality system now stretched beyond manufacturing control to include new product development, vendor selection, and customer service.

The broadening of quality required a new type of quality function to deal with these responsibilities. The new function, quality control engineering, would be involved in high-level quality planning, coordinating the activities of other departments, setting quality

standards, and providing measurements. Considering the scope of these activities, traditional management skills had to be replaced. A statistical background in itself could not guarantee success as a quality professional (Garvin 1988).

Influence in Japan. Feigenbaum's total quality control served as a model for early Japanese efforts to integrate multiple functions into the quality process and to design quality into new products. The approach was subsequently expanded and refined, and in 1968 a new designation, company-wide quality control, was adopted to acknowledge Japan's unique contributions.

Company-Wide Quality Control

The Japanese expanded on Feigenbaum's concept of total quality control in adopting the phrase "company-wide quality control" (CWQC). Feigenbaum's total quality control served as a model for early Japanese efforts to integrate multiple functions into the quality process and to design quality into new products. The approach was subsequently broadened and refined, and in 1968 a new designation, company-wide quality control, was adopted to acknowledge Japan's unique contributions (Ishikawa 1985).

Kaoru Ishikawa

Japan has produced a few gurus of their own, like Kaoru Ishikawa, Japan's foremost authority in the field of quality.

An Added Focus. Ishikawa's approach is company-wide quality control which requires not only the involvement of all functions, but also the involvement of all levels of the company. Quotes Ishikawa:

> Through total quality control with the participation of all employees, including the president, any company can create better products (or service) at a lower cost, increase sales, improve profit, and make the company into a better organization (Ishikawa 1985).

Japanese executives have taken this message very seriously, and they have increased profits and improved attitudes in their companies to prove this point.

Four Elements. Today company-wide quality control includes four principal elements: the involvement of functions other than manufacturing in quality activities; the participation of employees at all levels; the goal of continuous improvement; and, careful attention to the customer's definition of quality (Ishikawa 1985).

Better In Japan. Ishikawa's approach to quality control has done better than in its American manifestation. The Japanese' focus on participation of all, from the chief executive officer down to line workers, while in the U.S. quality control has often been delegated to quality control specialists and consultants. In Japan the commitment is total and "forever," as long as the company continues to exist (Ishikawa 1985).

Cause and Effect Analysis. Ishikawa invented the "cause and effect" analysis. These charts are also known as "fishbone diagrams" (because of the way they look) and

Ishikawa diagrams (after the inventor). The goal of quality control is to control the process (combination of cause factors) to obtain better products and productive services. A key feature of this approach to quality control is to identify and correct the problems during the process rather than after the fact. Problem prevention is also facilitated by the analysis.

Total Quality Management

A growing number of organizations are managing quality through Total Quality Management. Total quality management has been defined as a broad approach to quality, including product quality but extending well beyond to virtually everything done by an organization for external as well as "internal" customers within the same organization (e.g., what marketing does for manufacturing). Continuous improvements is sought toward measurable, ever-more difficult quality targets (Electronic Business October 15, 1990).

A Customer Orientation

Implementing total quality management requires a dramatic shift in orientation. Total quality management is a management approach that encourages everyone in the organization to focus exclusively upon serving the customer (Feigenbaum October 15, 1990). Consistent with the marketing concept, all company efforts are aimed at generating customer satisfaction as the key to satisfying

organizational goals (Kotler 1991).

A Companywide Effort

Total quality management provides a framework for systematically improving the quality of operations throughout an organization. This approach strives to prevent errors and reduce costs through analysis, work, and the cooperation of others, rather than identify the errors and later correct them. Total quality management is an ongoing companywide effort, where the pursuit of quality is deeply ingrained in the organization's culture and operations (Hart and Casserly 1985).

Implementing Total Quality Management

Companies vary in focus and impementation of total quality management. Corning, for instance, launched a program called "Total Quality Management System" (Wagel 1987). Implementing a Total Quality Management System required a fundamental change in culture. To manage the change, Corning embarked in a long-term (five- to ten-year), intensive educational process.

When Corning adopted its Total Quality Management System, the word "total" was embedded into the program's name because it was to involve every facet of the company's operations and to demand excellence from everyone in the corporation. Corning's system is based on four principles: meet the customer requirements; strive to do error-free work; manage by prevention; and finally, measure by the cost of quality.

Meet Customer's Requirements Meeting customer's requirements is the driving force behind the Total Quality Management System. **Customer** is defined as anyone with whom an employee has a job related relation-ship, an external or internal customer. An "external customer" refers to a person who purchases a product or service, whereas an "internal customer" refers to a co-worker, supervisor, supervised employee, or supplier.

Strive to Do Error-Free Work. This principle defines the standard for meeting a customer's requirements, the first time, every time. Basically, the purpose of this principle is to create an attitude that errors are not acceptable. With this new attitude, more emphasis is on understanding the root cause of errors, thus preventing these errors from occuring again.

Manage By Prevention. Quality must be built into work, allowing the employee to anticipate problems and make permanent changes to prevent errors. When more emphasis is given to preventing errors, there is a greater chance of meeting customer requirements.

Measure By the Cost of Quality. The cost of quality consists of error cost, detection cost, and prevention cost. Error cost includes the cost of redoing a job. Detection cost is the cost of inspecting errors. Prevention cost is the cost of building quality into the job. Measuring by the cost of quality focuses attention on problems, helps to set priorities for correcting errors,

and marks progress toward eliminating problems.

Malcolm Baldrige National Quality Award Program

A growing number of firms are using the Malcolm Baldrige National Quality Award examination criteria as a vehicle to achieve total quality management. The Malcolm Baldrige National Quality Award is administered annually to recognize U.S. companies that excel in quality achievement and quality management. The award promotes quality awareness, understanding of requirements of quality excellence, and sharing of information on successful quality strategies. Public Law 100-107 establishes its central purposes and requirements.

The Secretary of Commerce and the National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards) are given responsi-bilities to develop and administer the Awards with cooperation an financial support from the public sector (Chapman, Clark, and Dobson 1990).

Seven Categories. The examination consists of seven categories, representing the major components of a total quality management system.

1. **Leadership.** The senior management's success in creating quality values and in building the values into the way the company operates.
2. **Information and Analysis.** The effectiveness of the company's collection and analysis of information for quality improvement and planning.
3. **Strategic Quality Planning.** The effectiveness of the company's integration of the customer's quality requirements into its business plans.

4. **Human Resource Utilization.** The success of the company's efforts to realize the full potential of the work force for quality.

5. **Quality Assurance of Products and Services.** The effectiveness of the firm's systems for assuring quality control of all its operations and in integrating quality control with continuous quality improvement.

6. **Quality Results.** The company's improvements in quality and demonstration of quality excellence based upon quantitative measures.

7. **Customer Satisfaction.** The effectiveness of the company's systems to determine customer requirements and demonstrated success in meeting them.

Together, the seven categories address all major components of an integrated, prevention-based quality system (Whiting October 16, 1989).

Key Concepts. The criteria are based on specific concepts which together underlie all the requirements of quality managements systems. Most important, quality is defined by the customer. The senior leadership should create clear quality values and build the values into the way the company operates. Quality excellence derives from well-designed and well-executed systems and processes. Continuous improvement must be part of the managment of all systems and processes. Companies need to develop goals, as well as strategic and operational plans to achieve quality leadership. Shortening the response time of all operations and processes of the company needs to be part of the quality improvement effort. Operations and decisions of the company need to be based upon facts and data. All employees must be well trained and developed

and involved in quality activities. Design quality and defect and error prevention should be major elements in the quality system. Companies need to communicate quality requirements to suppliers and work to evaluate supplier quality performance. Together these concepts underlie all the requirements included in the items.

The Deming Prize Versus the Baldrige Award. Named in honor of W. Edwards Deming, who helped guide Japan's post-World War II industrial redevelopment, the Deming Prize is awarded annually in Japan by the Union of Japanese Scientists and Engineers (JUSE) since 1951. The Deming Prize recognizes excellence in quality strategy, management, and function.

The criteria used to select winners of the Malcolm Baldrige National Quality Award differ from those used in selecting winners of the Deming Prize. Both awards are essentially similar in that "both look for quality commitment throughout the organization, from top down, including anyone with a relationship with the company, such as suppliers, distributors, and customers" (Bush and Dooley 1989). However, the Deming Prize is more rigorous than the Baldrige Award. The Deming Prize also places more emphasis on process than the Baldrige Award.

Effects of Award Program. The Malcolm Baldrige National Award has been successful in raising the level of awareness of total quality management. One indication is the adoption of criteria for self-assessment and training

in numerous companies. A second is the growing number of conferences and technical meetings that include sessions on the Baldrige criteria. A third is the proliferation of both state and local recognition programs modeled after the Award. A fourth is the additional interest the Award is getting from people outside the industry, including education (Electronic Business October 15, 1990).

APPROACHES FOR MEASURING BIG Q

The five views of quality, the transcendent approach, the product-based approach, the user-based approach, the manufacturing-based approach, and the value-based approach (Garvin 1988), can be reconciled through measures of Big Q. Examples of broad-based, total quality measures are: (1) the Westinghouse measure, (2) the service quality measure, and (3) the Malcolm Baldrige National Quality Award Measure.

The Westinghouse Measure

From the perspective of Westinghouse, "Total Quality is performance leadership in meeting customer requirements by doing the right things right the first time." Total quality adds to the traditional definition of Quality, "Do it right the first time," the additional element of "Do the right things right."

Four components underlie the implementation of a successful Total Quality effort: customer orientation, human resource excellence, product and process leadership, and management leadership.

Total quality is measured by three essential criteria: value/price ratio, value/cost ratio, and error free performance.

Value/Price Ratio. Value is defined by the customer, in terms of his perception. Value/Price ratio is essentially a measure of customer satisfaction.

Value/Cost Ratio. This ratio is a basic element of financial success and with value-based pricing determined financial performance.

Error-Free Performance. This is the basic element of quality, as it has traditionally been defined. Excellent measures of this performance are the costs of non-confomance of the particular operation.

Westinghouse's three measures - value/price ratio, value/cost ratio, and error-free performance - relative to competition - form the basis for Total Quality Standards, which can be applied to any business anywhere.

The Service Quality Measure

Parasuraman, Zeithaml, and Berry (1985) formulated a service-quality model that highlights the main requirements for achieving total quality in a service organization. The model identifies five gaps that contribute to poor-service quality perceptions. These gaps are described below.

1. **A Gap Between Customers' Expectations and Management's Perception** results when management wrongly perceives customer's expectations.

2. **A Gap Between Management Perception and Service** occurs when management does not set quality standards that are clear; or they might be clear but unrealistic; or they might be clear and realistic; but management is not fully committed to enforcing this quality level.

3. **A Gap Between Service-Quality Specifications and Service Delivery** results from factors affecting service-quality, such as poorly trained personnel, equipment breakdowns, and so forth.

4. **A Gap Between Service Delivery and External Communication** prevails when customer expectations are affected by promises made by the service provider's communications.

5. **A Gap Between Perceived Service and Expected Service** results when one or more of the previous gaps occur.

Through the service-quality model and the five factors influencing the overall evaluation of service quality (tangibles, reliability, responsiveness, assurance, and empathy), companies can improve service quality.

The Malcolm Baldrige National Quality Award Measure

The Award Examination is based upon criteria designed to be a quality excellence standard for companies striving for the highest levels of overall performance and competitiveness. In all, there are 32 Examination items, and 99 areas to address among the seven categories. The 1991 Malcolm Baldrige Examination Category/Items and point values are summarized in Exhibit 3 (1991 Malcolm Baldrige National Quality Award Application).

EXHIBIT 3

1991 MALCOLM BALDRIGE NATIONAL QUALITY AWARD

1991 Examination Categories/Items	Maximum Points	
1.0 Leadership		100
1.1 Senior Executive Leadership	40	
1.2 Quality Values	15	
1.3 Management for Quality	25	
1.4 Public Responsibility	20	
2.0 Information and Analysis		70
2.1 Scope and Management of Quality Data and Information	20	
2.2 Competitive Comparisons and Benchmarks	30	
2.3 Analysis of Quality Data and Information	20	
3.0 Strategic Quality Planning		60
3.1 Strategic Quality Planning Process	35	
3.2 Quality Goals and Plans	25	
4.0 Human Resource Utilization		150
4.1 Human Resource Management	20	
4.2 Employee Involvement	40	
4.3 Quality Education and Training	40	
4.4 Employee Recognition and Performance Measurement	25	
4.5 Employee Well-Being and Morale	25	
5.0 Quality Assurance of Products and Services		140
5.1 Design and Introduction of Quality Products and Services	35	
5.2 Process and Quality Control	20	
5.3 Continuous Improvement of Process	20	
5.4 Quality Assessment	15	
5.5 Documentation	10	
5.6 Business Process and Support Service Quality	20	
5.7 Supplier Quality	20	
6.0 Quality Results		180
6.1 Product and Service Quality	90	
6.2 Business Process, Operational and Support Service Quality Results	50	
6.3 Supplier Quality Results	40	

7.0 Customer Satisfaction		300
7.1 Knowledge of Customer Requirements and Expectations	30	
7.2 Customer Relationship Management	50	
7.3 Customer Service Standards	20	
7.4 Commitment to Customers	15	
7.5 Complaint Resolution for Quality Improvement	25	
7.6 Determining Customer Satisfaction	20	
7.7 Customer Satisfaction Results	70	
7.8 Customer Satisfaction Comparison	70	
TOTAL POINTS		1000

COMPONENTS OF BIG Q

Current view of Big Q, as examined in this dissertation, consists of these categories: leadership, strategic quality planning, human resource utilization, quality assurance of products and services, quality results, and customer satisfaction.

Leadership

The change to a total quality organization calls for top management commitment and active involvement in all quality improvement efforts.

Leadership Commitment

Leadership commitment is demonstrated when the values and principles of quality improvement are totally ingrained so that these values are reflected in the leader's behavior. A leader that is committed to lead a cultural transformation truly believes, both intellectually and emotionally, that using quality philosophies and

concepts is the only way to run the company. Leaders believe in the ability of the work force to improve the operation, and are commited to developing workers as individuals and as teams to accomplish the corporate mission. This fosters an environment, where people can be utilized as problem solvers and solution implementers (Ernst and Young Quality Consulting Group, 1990).

Leadership commitment can be prevalent in the form of policies, organizational structure, investment, and individual responsibility and authority (Shores 1989). This commitment can be translated into the company's philosophy and goals to guide all employees (Persico 1989). Commitment can be demonstrated through the consistency of actions and words (Westinghouse Productivity and Quality Center June 1989).

Key Values for Success

The structure that will create a total quality organization must promote certain values and attitudes. Seven values are critical for the success of an organization (George):

1. An atmosphere of openness and trust.
2. Willingness of all employees, including management, to interact on an equal basis.
3. Acceptance of change as a way of life.
4. Cooperation between departments.
5. Willing individuals.
6. A strong, ongoing organization program.
7. Growth in the organization.

Coping With Change

In the 1990s, leadership is about coping with change

in an environment which has become increasingly complex, volatile, and competitive. Given this, old practices may no longer be applicable. The challenges of this decade can be summarized as follows (Kotter 1990):

1. **Direction.** Creating vision and strategies describe a business, technology, or corporate culture in terms of what it should become over a long term and articulate a feasible way of achieving this goal.

2. **Independence.** Creating an environment where no one has complete autonomy, where most employees are tied to many others.

3. **Communication.** Communicating a vision of an alternative future. Whether delivered with many words or a few carefully chosen symbols, messages are not necessarily accepted just because they are understood.

4. **Credibility.** Achieving credibility in the message. The credibility of the message could depend on the track record of the person delivering the message, the content of the message itself, the communicator's reputation for integrity and trustworthiness, and consistency between words and deeds.

5. **Empowerment.** Giving employees power, in allowing them to initiate actions, is essential for adjusting to internal and external changes.

6. **Motivation.** In coping with the inevitable barriers to change, successful motivation ensures that leaders will have the energy to overcome obstacles, to achieve grand visions, and to motivate people.

7. **Informal Networks.** Strong networks of informal relationships can deal with the greater demands for coordination associated with nonroutine activities and change. Communication and trust allow for an ongoing process of accomodation and adaptation.

Similar challenges are faced by leaders in the midst of a quality transformation. Successful implementation of total quality, as achieved by world-class companies, demands drastic changes in corporate culture.

Change Management Process

Moving towards total quality requires extreme and revolutionary actions. Currently, there is a study being conducted by researchers at Westinghouse which examines change in organizations shifting to a total quality orientation. The study has led to the development of a model of the "Change Management process," which has been validated by studying over 165 business units, including examples of both successful and unsuccessful change.

The study found seven key factors for managing successful change: (1) vision, (2) drivers, (3) leadership, (4) participation, (5) communications, (6) training and education, and (7) reinforcement (Arendt 1987).

The first element for managing successful change is "vision." The vision, or the goal of the organization, must ultimately be communicated at all levels to every member of the organization. The goal has to be clear, positive, forceful, and simple. Moreover, it has to be defined through a measureable set of objectives, for each department and ultimately for every person in the business unit. The vision should represent a "stretch;" for, easily attained visions, involving marginal improvement, do not generate the kind of radical change required.

The second element for managing sucessful change is "drivers:" the forces which create the need to change. Like vision, the drivers must be understood thoroughly at all levels of the company. The most fundamental change

driver revealed in the study is survival. Additional drivers include: change in competition and customer dissatisfaction. The last driver found can be captured in the phrase "Be all you can be:" or, the knowledge in the company, that each person has the opportunity and challenge to perform better, can be in itself a powerful change driver.

The study suggests two forces which are not effective change drivers: first, management directives, which there are no penalties associated with failure to meet the objective; and, second, reorganization, without a clear vision of the purpose and goal of the moves.

The third essential ingredient for successful change is "leadership." In every organization, there is a change leader, recognized by everyone in the company. An obstacle to change is management inconsistency, where management's actions do not reflect words. Successful change can occur when management demonstrates consistency of actions and words.

An important implication of the Westinghouse study is that managers can be selected on their ability to manage change. The study found successful change managers to share a set of characteristics which facilitated their ability to manage change. Managers characteristics which facilitate their ability to lead change include: staying power; communications skills; low desire for total control; and finally, respect for the abilities of people.

The fourth key element found for successful change

is "participation," or people involvement. The people performing a process need to be involved in the design and implementation of changes and improvements in the process. The business units studied employed a wide variety of participation techniques, including teams, multi-functional groups, and task forces, which cut across department boundaries. While the study pointed to variations in styles, the element of broad participation was present in successful change processes.

The fifth element of successful change is "communication." The study found tight communication patterns in organizations undergoing successful change. Information flows continuously, consistently, rapidly, and reliably throughout the organization, in all directions, through all functions, and at all levels. This accelerated communications pattern in fact stands out as a hallmark of the successful changing organization. The study found communications high on the priority list of key issues for quality improvement.

The sixth element of successful change is "training and education." For a cultural transformation to happen, new skills have to be learned, and new behaviors have to be assimilated at all levels. Change will not succeed without adequate training at all levels. Competing effectively in the global competitive arena demands that people be trained and educated, either formally or informally, and thereby equipped with the right tools,

techniques and skills.

The final element of successful change is "reinforcement." Successful change organizations have progress charts and vision statements that are visible. These facilitate the process by building momentum. Recognition was found to play a motivating role.

The Westinghouse study concludes with some dogmatic statements about change. First, people must be involved in designing and implementing improvements. Second, high stress levels result from low participation. Third, the vision and reasons why have to be understood by everyone. Fourth, management consistency, between word and deed, are essential. Finally, change is not just something other people do.

Culture

When Drucker first articulated the marketing concept four decades ago, he noted that marketing was not really an isolated management function but rather a whole business as seen from the customers' point of view. The implication is that the marketing concept defines a distinct organizational culture, a fundamental set of beliefs and values that put the customer in the center of all the organizations goals (Deshpande and Webster 1989).

The term "market orientation" is used to mean the implementation of the marketing concept (Kohli and Jaworski 1990). The marketing concept is one in which three pillars of the marketing concept are manifest: (1)

customer focus, (2) coordinated marketing, and profitability (e.g. Kotler 1990).

A total quality culture embraces the marketing concept. However, despite the centrality of the marketing concept to quality organizational issues, there has been no study of this in marketing journals. This possibly reflects the scant attention given to organizational issues in marketing in general (Reukert and Walker 1987).

In marketing, the study of culture has focused exclusively on understanding consumer behavior, particularly the definitions of cultures and sub-cultures as market segments, culture as communication, the diffusion of innovations, and cross-cultural comparisons of international markets (Engel, Kollat, and Blackwell 1968; Zaltman 1965). As Deshpande and Webster (1989) suggest, subsequent treatement of culture in marketing also have been limited mostly to the consumer behavior area.

In contrast to the limited attention given to organizational culture in marketing, a major thrust into theoretical modeling and empirical research has occured in the field of organizational behavior (Hofstede 1986; Jelinek, Smircich, and Hirch 1983; Kilmann, Saxton, and Serpa 1985; Sathe 1983; Schwartz and Davis 1981). Organizational culture has thus become one of the most active research areas within the discipline in the past decade (Alaire and Firsirotu 1984; Frost et al. 1985; Ouchi and Wilkins 1985). Practioners interest in the topic has also risen as seen in Tom Peters' and Robert

Waterman's best-selling book In Search of Excellence.

According to Deshpande and Webster (1989), "organizational culture" as "the pattern of shared values and believes that help individuals understand organizational functioning and thus provide them norms for behavior in the organization." Success in total quality hinges on instilling a customer-oriented and a participative, creative, and innovative work culture.

Creating a Participative Environment

Top management sets the stage for quality improvements by creating a participative environment where trust, cooperation, respect, openness, and teamwork are reinforced. A 1989 forum, hosted by Xerox, found these pitfalls in management style to create barriers to success in firms:

"o We're smarter than our customers. We know what they really want.

o Quality is not a major factor in customer decisions.

o Our key audience is the analysts and financial markets.

o The way to influence corporate performance is portfolio management and creative accounting.

o It costs more to provide quality product or service - increases in quality mean increases in cost.

o Strategic success comes from large, innovative leaps, rather than small, continuous improvements.

o We cannot manufacture competitively at the low end.

o Workers are paid to do, not to think.

- The job of senior management is strategy, not operations or implementation.
- The key disciplines from which to draw senior management are finance and marketing.
- Success is good, failure is bad.
- If it ain't broke, don't fix it."

Consequently, many of the problems of U.S. firms can be attributed to these fictitious assumptions (Haavind, October 16, 1989).

Strategic Quality Planning

Strategic quality plans are essential for retaining or achieving quality leadership, and for improving all operations continuously. These plans address in detail how companies pursue market leadership through providing superior quality products or services and through improving the effectiveness of all operations of the company. Strategic quality improvement plans do not stand aloof, but rather are woven into the overall business plan (1991 Malcolm Baldrige National Quality Award Application Guidelines).

Short Term Versus Long Term Focus

In this competitive arena, corporations are under pressure to deliver short term returns. However, the trade-off in focusing too heavily on the short-term is an aversion to risk that dooms a business to stagnation as well as a diversion away from quality improvement. Not to say that focusing primarily on the long term is without

problems. Companies that overemphasize the future may deprive themselves of near-term profitability and cash flow (Carlson 1990).

Strategic planning plays an important role in achieving a balance between the short and the long term. In fact, the challenge of strategic plans is to deliver short term profits while at the same time providing a platform for long-term value enhancement (Carlson 1990). Obviously, this presents a challenge to companies implementing any Total Quality Management program. Since total quality management programs take time to become fully productive, management can not emphasize short-term financial returns (Hart and Casserly 1985).

Plans in Award Winning Corporations

One study identified implementation plans as a point of differentiation in award-winning firms (Labovitz and Chang 1990). The study revealed that virtually all of the winners of the Deming Prize (the Japanese National Quality Award), can point to clear, detailed, well-communicated total quality improvement plans. Such characteristics are rarely encountered in either U.S. or European countries.

In addition, the study showed award-winning firms to communicate their quality plans schematically, in visuals posted throughout the company. The daily exposure of such plans through a comprehensible medium increased employees' understanding of company goals.

Ordinarily, these total quality implementation plans

cover between three and five years, with specific annual themes and objectives. Annual themes can include reliability enhancement, strengthening vendor partnerships, and cycle time reduction.

Most plans require some adjustment to changing conditions at least once a year. Feedback mechanisms, on which the adjustments are based, are specifically mandated to the point that continuous improvement is ingrained in the implementation plan itself.

More attention is given through the designation of a limited number of big projects to be complete each year. In assigning specific projects within the implementation plan, senior management can effectively focus the organization's resources and energies on a critical few quality improvement projects.

Award-winning implementation plans were found to designate defensive and offensive quality improvement goals. Defensive quality improvement goals are similar to those traditionally included in many U.S. quality implementation plans. They are directed at fulfulling the potential of status quo, such as reducing nonconformance, or eliminating cost overruns. Offensive quality improvement goals, in contrast, are more aggressive in nature. Their goal is to expand the company's potential beyond the status quo; thus, improving competitive posture, customer satisfaction, and market share. The study also revealed the most powerful offensive goals to be quite subtle.

In terms of content, award-winning plans tend to detail four main types of quality improvement activity: senior management activity, customer satisfaction activity, employee involvement activity, and training activity (Lebovitz and Chang 1990).

Competitive Benchmarking

In the planning process, benchmarks are used to compare company's performance against the world's best. Companies employ criteria for selecting quality-related competitive comparisons and world-class benchmarks to support strategic quality planning.

Benchmarking, a technique pioneered by Xerox, is being used increasingly in U.S. businesses. A formal definition of benchmarking, composed by David T. Kearns, chief executive officer of Xerox, is provided here:

> Benchmarking is the continuous process of measuring products, services, and practices against the toughest competitors or those companies recognized as industry leaders (David T. Kearns, CEO, Xerox Corporation)

Benchmarking establishes operating targets and productivity programs based on industry best practices. It thus leads to profitable, high-asset utilization businesses that meet customer needs and have a competitive advantage (Camp January 1989).

Benchmarks are a projection of future state or endpoint. They indicate the direction to pursue with specific insights into how the benchmarks can or should be

attained. For example, benchmarks can suggest reducing costs, or achieving higher levels of customer satisfaction. Converting benchmarks into operational targets allows firms to translate long term actions into specifics. A target specifies what can be attained within a specific time frame, usually one yearly budget cycle or business plan horizon (Camp February 1989).

Benchmarking sets new directions and establishes effective goals and objectives, ensuring that the best, feasible, and proven practices are incorporated into business operations. Benchmarking is a rational way of ensuring the organization is satisfying customer requirements and will continue to so as customer requirements change over time (Camp Febuary 1989).

Benchmarking ensures the development of effective business plans by providing an increased awareness of products, costs, markets, and processes. The benchmarking process challenges current practices by introducing new ideas and practices from the external environment. These new practices are used to build functional strategies and business plans (Camp March 1989).

Human Resource Utilization

A major challenge in corporations today is people. Companywide quality objectives cannot be met without a fully committed, well-trained work force. The effective performance of the work force is dependent on ongoing management commitment and involvement in all quality

improvement efforts. For managers to play a key role in these efforts, they must be trained to use the same tools as all workers and must be actively involved in helping employees achieve quality improvements (Perisco 1989).

Companies use human resource policies and strategies to continuously improve quality. Reward and recognition can reinforce participation and emphasize achievement of quality objectives. Education and training in basic quality skills can be linked to work performance and to understanding and solving quality-related problems (1991 Malcolm Baldrige National Quality Award Guidelines).

The Human Dimension

Quality places new demands on people. From a human resource perspective, the concept of quality is closed linked to the meaning of work. The people of an organization are the ultimate creators of quality products and services. Consider for example a company that achieves a competitive advantage by pursuing a low-cost strategy (Porter 1980). Clearly, without the people in the organization to carry out the strategy, the company's competitive advantage begins to erode.

Beyond this, unless quality exists in the lives of these people, there will be a shortcoming in the products and services produced. Quality is thus closely associated with the outcome of the attitudes of the people in the organization. Factors bearing upon the safety, health, well-being, and morale of employees must be part of the

continuous improvement objectives and activities of the company (Alexander 1988).

People, A Competitive Advantage

A fourth generic strategy that can be added to Porter's (1980) existing framework - cost leadership, differentiation, and focus - is people. The development of a company's work force, including management, through education and training, can lead to a tremendous competitive advantage.

A company can concentrate on achieving superior performance through its people. A human advantage can improve quality, raise productivity, improve customer satisfaction. reduce costs, and increase profitability.

Participative Management Style

In the face of today's increasingly competitive marketplace, most successful companies are turning away from the traditional "authoritarian management practices" of the past, and are focusing instead on "participative management practices." Companies create democratic work environments, drive out fear, and empower employees to participate in decision making. Elements of the participative environment include: autonomy, recognition and rewards, training and development, and most important dignity and decent working conditions (Fortune September 24, 1990).

Reward and Recognition

Reward and recognition encourages and motivates employees to contribute to quality. One report, which is based on interviews with members of the Conference Board's U.S. Quality Council, showed quality executives to favor recognition for quality improvement over finan-cial reward (Schein 1990). The council executives found financial renumeration to set up a win/lose situation, that can polarize the work force. In their view, employees respond enthusiastically to publicity and nonmonetary awards for superior performance.

Individuals and/or teams could be recognized for quality achievements. Powerful forms of recognition include: acknowledgement in the form of a written or verbal appreciation for a particular contribution; personal exchange by conveying interest in others as individuals; and reward, a tangible expression of appreciation for a job well done (Xerox 1987).

Empowerment

When a participative work environment begins to emerge, all employees are enabled or "empowered" to participate in decisions affecting their work (Schein 1990). Empowerment implies trusting all employees and managers to act responsibly and to give them appropriate authority (Townsend and Gebhardt 1988). As firms move toward continuous improvement, "empowerment" becomes increasingly important.

Teams

Team involvement is vital in any quality improvement effort. Quality gurus are in agreement on this point. W. Edwards Deming states, "Teamwork is sorely needed throughout the company" (Deming 1986). Among the benefits that accrue from working together in teams are: higher group performance, fewer poor alternatives or decisions, more new ideas, greater enthusiasm, remphasis of mission and objectives.

The team is the most visible form of employee involvement in the quality process. Team members must have the skills and training in process analysis, statistical process control, and unstructured problem solving to produce continuous improvement in processes and products (Perisco 1989).

Education and Training

Company employees are key to quality improvement. Meeting quality objectives requires a fully committed, well-trained work force that is encouraged to participate in the continuous improvement activities of the company. At all levels employees must be convinced that concern about quality is part of their job (1991 Malcolm Baldrige National Quality Award Application).

Education and training is essential to continuous quality improvement through the upgrading of skills and mastery of new methods. Education and training could foster a concern for quality and the practice of "doing

it right the first time" (Shetty 1987).

Schein (1990) reports that council executives considered training programs to be important for orienting employees to quality and for teaching them fundamental skills. Quality training often falls into: (1) awareness, raising the level consciousness of quality, cost of quality, and group dynamics; (2) skills, including group problem-solving, team-building, and decision-making; and (3) statistical techniques, consisting of data collection, process control, and advanced statistics (Schein 1990).

Profile of Employee Behaviors

There has been a growing awareness within firms and academia of the need to match employee behaviors with characteristics of firms pursuing quality improvement strategies. Shuler and Jackson (1987) found the profile of employee behaviors to be: (1) relatively repetitive and predictable behaviors, (2) more long-term or intermediate focus, (3) modest amount of cooperative, interdependent behavior, (4) high concern for quality, (5) modest concern for quantity of output, (6) high concern for process (how the goods or services are made or delivered), (7) low risk-taking activity, and (8) commitment to the goals of the organization.

In an attempt to gain a competitive advantage in firms enhancing product and service quality, the key management practices include: (1) relatively fixed and explicit job descriptions, (2) high levels of employee

participation in decisions relevant to immediate work conditions and the job itself, (3) a mix of individual and group criteria for performance appraisal that is mostly short term and results-oriented, (4) relatively egalitarian treatment of employees and some guarantees of employment security, and (5) extensive and continuous training and development of employees. Together, these practices facilitate quality enhancement by helping to ensure high reliable behavior from individuals who can identify with the goals of the organization and, when necessary, be flexible and adaptable to new job assignments and technological change (Drucker 1985).

Quality Assurance of Products and Services

Discussions on quality assurance of products and services mention the systematic approaches used by companies for assuring quality of products and services. These approaches are based upon process design and control, including control of procured materials, parts, and services. Other discussions focus on integrating process control with continuous quality improvement.

Tools and Techniques

The following new quality-improvement tools and techniques are used by leading companies (Schein 1990):

Competitive Benchmarking. A technique pioneered by Xerox in 1979 that compares a company's performance to that of leading competitors, and to non-competing firms viewed as outstanding in their industry. Xerox, for

instance, uses L.L. Bean as its competitive benchmark in distribution systems.

Cost of Quality. A technique used by many companies to target (or "prioritize") opportunities for quality improvement, e.g., the highest error rate or the most wasteful process.

Avoidable Input Analysis. American Express uses this technique to eliminate unnecessary customer inquiries, resulting from such causes as billing disputes or unclear marketing programs. For instance, American Express analyzes 147 different types of customer phone calls to root out the causes for the input and to take appropriate action to reduce the unnecessary input. American Express equates avoidable input with "rework" and "scrap" in the manufacturing sector.

Value to Price Ratio. Westinghouse is credited for developing this measure of customer satisfaction, which expresses the perceived value to the customer (relative to competition) compared to the price the customer pays.

Structured Business Analysis. A method, also known as "Cost-Time Profiling," developed by Westinghouse for shrinking cost and time in both blue-collar and white collar operations leading to higher turnover and higher profit margins.

Six Sigma

Six Sigma is a statistical term attached to the concept of achieving approximately zero defects, or 3.4

defects per million operations. While Six Sigma requires no new manufacturing equipment, it does require rethinking the manufacturing process. For this reason, it is very difficult to achieve Six Sigma with an existing product line. With Six Sigma, the company sets a target for the number of permissible errors for each series of operations and maintains that goal. Motorola, for example, saved $500 million during 1990 from reducing defects under the Six Sigma approach (Rifkin, January 13, 1991).

New, New Product Development

An opportunity exists for companies to reduce new-product development time, lower the investment required for a new product and improve the quality of products all at once (McGrath October 15, 1990). Doing so requires a host of techniques, some of which are discussed here.

Quality Functions Deployment. "An approach to design using matrix charts to carefully define customer requirements and to focus efforts on meeting them rather than simply manufacturing to a set of predefined specifications" (Electronic Business October 16, 1989). The approach focuses and coordinates skills within a firm, first to design, then to manufacture and market goods that satisfy customers needs and wants. It is based on the belief that products and/or services should be designed to reflect customers' desires and tastes. For optimal results, marketers, designers, engineers, and strategists should work closely together in cross-

functional teams from product conception to end results (Hausing and Clausing 1988).

Cost-Time Profile. A tool, pioneered at Westinghouse, to simulataneously reduce cycle time, cost and investment while maximizing quality, responsiveness to customer needs, profit and cash flow (Westinghouse Productivity and Quality Center June 1989). It charts the steps in making a product or delivering a service, then identifying the costs and time at each step. The result: a map of the process that helps managers find ways to squeeze out cost and cycle time investment by shrinking cost and cycle time (Steward July 3, 1989).

Design for Value. An integrative, systems approach to product and process development, that was created at Westinghouse. Design for Value is used to produce designs with superior customer value using minimum resources. Its objective is to create cost-effective designs in both products and processes to meet customer requirements consistently. Results dramatically reduce the time required to successfully introduce products in the marketplace. Other benefits include: improved customer value, increased product quality, and lower costs total cost (Westinghouse Productivity and Quality Center March 1989).

Just-in-time Manufacturing. "A production system in which materials or parts are delivered as they are needed for assembly, rather than being kept in inventories or

safety stocks" (Electronic Business October 16, 1990). Just-in-time can be an appropriate strategy in a firm when the initial goal is to reduce inventory or improve cash flow (Potts October 1990).

Quality and Time

Using several company cases, Stalk and Hout (1990) point to different means of managing time, in production, new product development, and sales and distribution, that respresent the most new powerful sources of competitive advantage.

Focusing on time changes how an organization works. An analysis of competitive developments in a wide range of industries indicates that fast cycle capability contributes to higher performance, reduced costs, improved customer service, high quality, and more innovative behavior (Bower and Hout 1988).

Meeting customer requirements and expectations and success in competitive world markets depends not only on the perceived quality of products and services in the marketplace, but also on the quality and responsiveness of designs. Accomplishing the latter demands shorter product and service introduction cycles and more rapid response to customers (Melan 1989), which requires the application of quality techniques in product development (McGrath October 15, 1990).

Quality and Fast Response

Fast response is a major quality attribute. Reduc-

tion in lead times together with quick response can occur when quality systems and processes are designed to meet both quality and response goals and when response time is a major focus of quality improvement processes. This requires that all designs, objectives, and work unit activities include measurement and monitoring of cycle time and responsiveness to seek opportunities for improvement. Major gains in response may occur when processes and paths are simplified and shortened. Such improvements are often accompanied by simulataneous improvements in quality. Hence, it is highly beneficial to consider response time and quality together (1991 Malcolm Baldrige National Quality Award Application).

Fast Response and Differentiation

Whereas a strategy of differentiation can be pursued in many ways, superior quality is most commonly used (Porter 1980; 1985). Since fast response is a major attribute of quality, it becomes a point of differentiation. Porter (1980) argues that a strategy of product differentiation strives to earn higher profit margins by charging higher prices. Given that a fast response leads to cost reductions, a differentiation strategy could be sustained without a price premium.

Customer Satisfaction

A growing number of firms today are seeking a competitive advantage through long-term customer satisfaction

(Schnaars 1991). Such firms have awakened to the fact that quality is not enough. In today's competitive milieu, companies must not only improve quality, but also satisfy the customer in every way before, during, and after the sale (Finkelman May 14, 1989).

Consistent with the marketing concept, a strategy of customer satisfaction is customer-driven. It is a long-term strategy based on placing customers first. A strategy of customer satisfaction sets off a profitable chain reaction. Increasing a customer's level of satisfaction builds customer loyalty, which increases repeat purchase, and creates positive word of mouth, which brings in new customers (Schnaars 1991). Naturally, if customers are satisfied, bottom-line results will follow (Finkelman May 14, 1989).

In every firm there is ample opportunity to improve customer satisfaction. Among the most common practices are: (1) buiding relationships with customers, (2) responding to changes in expectations, (3) staying close to customers, (4) offering superior service, (5) committing to customers, (6) tracking customer satisfaction, (7) developing support networks, and (8) implementing a process for efficient complaint handling.

Building Relationships

A strategy of customer satisfaction is based on companies developing close relationships with customers. Building relationships with customers pays off by creating

repeat purchases and promoting customer loyalty. This strategy places new demands on companies by requiring them to focus not only on customers and employees but also on every link in the distribution chain. Uptil recent years, manufacturers have overlooked this point. But today a growing number of firms recognize the benefits in successful relationships (Sellers March 13, 1989).

Responding to Changes in Expectations

Improving levels of customer satisfaction is based on the a company's ability to anticipate and to respond to changing expectations (Schein 1990). When companies increase the "right" expectations, as specified by the consumer, higher levels of customer satisfaction result. Companies that overstate product and service claims, or offer an extra bundle of benefits, which are not perceived as important in the eyes of the customer, are unlikely to raise levels of customer satisfaction.

Expectations are formed before a customer buys a product and service. They are anticipation about how a product and service will perform (Schnaars 1991). Among the factors that influence customers' expectations are: past experience, word-of-mouth communications, personal needs, and marketing efforts (Zeithaml, Parasuraman, and Berry 1990).

Staying Close to Customers

Getting close to the customer matters most in a strategy of customer satisfaction. However, companies

that never see the customer have a difficult time doing so. Six keys to staying close to customers are:

1. Think of yourself as the customer
2. Make every employee aware of your vision
3. Monitor service internally to see that employees treat one another like customers
4. Listen to everyone in the distribution chain
5. Prune bureaucracy so customers can talk to you
6. Stay in touch after the sale

Staying close to customers is essential for achieving high levels of customer satisfaction. Consultant Robert Waterman Jr., the co-author of In Search of Excellence, explicitly acknowledges its importance. He said: "Companies that do that are always going to know more quickly whether the market wants the product (Sellers March 13, 1989).

Offering Superior Service

Companies can achieve high levels of customer satisfaction by providing superior service. From a company standpoint, achieving higher levels of customer satisfaction has a demonstrable impact on the bottom line. According to several PIMS researchers, "Service quality is a key to profitability and growth - even for firms that are thought as primarily manufacturers." They found that companies of high-service quality benefit in: higher prices, reduced marketing, greater repeat business, and higher market share. Moreover, businesses with excellent service quality generate more profit and grow more rapidly than those of lower-service competitors

(Thompson, DeSouze, and Gale June 1985).

Committing to Customers

Commitments or promises made to customers present another opportunity to achieve higher levels of customer satisfaction. Companies commit to customers by offering guarantees and by promoting trust and confidence in products and services. Committing to customers pays off by building customer loyalty, increasing repeat purchases and positive word of mouth, and bottom line results.

Guarantees. A guarantee is designed to be measurable and therefore actionable (Finkelman May 14, 1989). A guarantee reduces the risk in consumer purchase and communicates high quality (Schnaars 1991). As a signal of quality, the value of a guarantee is in the image it conveys.

Successful guarantees exhibit several characteristics. First, it must be unconditional, without, caveats or conditions that withhold a customer from collecting on the guarantee. Second, the conditions and boundaries of the guarantee must be stated in detail. Third, a guarantee must be simple for customers to understand. Fourth, a guarantee must be actionable and easy to collect on (Hart 1988).

Guarantees can be either explicit or implicit. An explicit guarantee is a statement that conveys what the customer can expect from the product or service (the "promise") and what the company will do if it fails to

deliver (the "payout"). An implicit guarantee does not specify a payout. Rather, it is an unspoken, unwritten understanding that the firm will do whatever is necessary to satisfy customers (Hart 1990).

Trust and Confidence. Another way of committing to customers is by promoting trust and confidence in products and services. Companies must treat a customer's problem as a serious signal for action, not as an annoyance to be ignored. Companies must operate on the assumption that customers are honest and worthy of care.

One way to built consumer trust, confidence, and loyalty is by listening to them. Many firms install 800 numbers, which allow consumers to contact a company with comments, questions, and complaints. Consumers use these lines often. These lines promote communication with customers and create good-will over the long term (Schnaars 1991).

Customer-Satisfaction Tracking Systems

Companies conduct extensive research to determine who customers are and what expectations they have. Among the main customer-satisfaction tracking systems are (Kotler 1991):

Complaint and Suggestion Systems. In market-oriented companies, customer complaints are recorded, analyzed, and responded to. Complaints are then tabulated, and management attempts to resolve the complaint for prevention of reoccurence.

Customer Panels. Panels are run with customers who have agreed to communicate their attitudes periodically through phone calls or mail questionnaires. Compared to customer complaints and suggestion systems, panels are more representative of the range of customer attitudes.

Customer Surveys. Mail questionnaires are mailed periodically to a random sample of customers to evaluate dimensions of service quality. Customers, for example, evaluate their satisfaction on a five-point scale - very dissatisfied, dissatisfied, neutral, satisfied, and very satisfied. Once the responses are summarized, management compares present ratings with past ones. This system is effective in improving the staff's motivation to provide quality customer service, given that the ratings will be reviewed by top management (Daltas 1977).

Developing Support Networks

Support networks provide company employees and distributors with the information they need to make intelligent decisions immediately. A company must also provide continuing training for each employee when it is needed, rather than just fulfilling some annual training requirement. Finally, a company must orient their support systems inorder to satisfy customers with its products and services (Finkelman May 14, 1989).

Efficient Complaint Handling

A process for handling of complaints for prevention

for recurrence of problems creates another opportunity for increasing levels of customer satisfaction. An efficient complaint handling process can convert a customer from a dissatisfied to a satisfied state. Any efficient process for evaluating the handling of complaints must focus on: (1) empathy with irritated customers; (2) the speed with which the complaint is handled; (3) the equity or fairness with which it is resolved, and (4) the ease with which the consumer can contact the firm (Schnaars 1991).

COMPETITIVE STRATEGY

Recently, American firms have turned to quality as a way to gain a competitive advantage. A fast-rise in global competitors, a change in customer expectations, coupled with a huge trade deficit, are reasons for this occurance.

Companies that focus on quality could strive to improve their performance and respond to competition. Before discussing the bottom-line benefits of quality, consider how it can be used as a competitive strategy.

QUALITY-COST LEADERSHIP, QUALITY-DIFFERENTIATION

Porter (1980) proposes three strategic alternatives for developing a sustainable competitive advantage: cost leadership, differentiation, and focus. Cost leadership and differentiation, can be applied either to an entire industry, or to a segment (i.e., focus strategy).

The first strategy, cost leadership, earns profits

by reducing costs. The second strategy, differentiation, focuses on selling a unique product for which customers are willing to pay higher prices. The third strategy, focus, can take the form of either cost leadership or differentiation, but the emphasis is on a particular segment only (Porter 1980; 1985).

Pursuing Both Strategies Simultaneously

The most controversial aspect of Porter's framework is the issue of whether a firm can pursue more than one generic strategy simulataneously. Porter's strategies are generally presumed to be mutually exclusive. He advises pursuing one strategy, rather than two or three, to avoid the mediocre position, he calls "stuck in the middle," of both profits and market share. Companies that pursue more than one strategy are likely to end up doing nothing well. Each strategy requires completely different skills (Porter 1980). Does the quality literature support or refute Porter's advice?

Quality-Differentiation Strategy. One of the most common basis of differentiation is by offering superior quality (Kiechel 1981). A company can focus on achieving superior performance along some quality-related dimension perceived industrywide as being unique.

A company that pursues a quality-differentiation strategy achieves superior performance, creates a defensible competitive position, and insulates itself against inroads of rival firms. Customer loyalty and

quality uniqueness are difficult barriers for new competing firms to surmount (Porter 1980).

Quality-Cost Leadership Strategy. Superior quality is also a common basis of cost leadership. Crosby (1979), for instance, defined quality as "conformance to requirements," and demonstrated how to improve quality and lower costs simulateneously. He believed that if quality were improved, total costs would decline, and profitability would increase (March and Garvin 1986).

Quality gurus like Crosby focus on an internal, operational view of quality. This leads us to believe that customer needs and preferences are ignored. But, more recent approaches to quality, such as total quality management, examine quality from the perspective of the customer, and reduce costs in errors and defects in the entire organization.

A Reconciliation. Porter (1980) advises against pursuing differentiation and cost leadership in tandem. Doing so results in a mediocre position.

In contrast to Porter's argument, quality companies have succeeded in pursuing the two strategies simultaneously. Consider IBM, a recent winner of the Malcolm Baldrige National Quality Award. IBM has one of the lowest production costs in the computer business, extensive experience effects, and a large share of the market. IBM's products and services are surely differentiated in the minds of customers.

A PIMS study by Phillips, Chang, and Buzzell (1983)

found no support for the hypothesis that quality-differentiation is incompatiable with a strategy of low-cost leadership. The study failed to support the widely held view that a high relative quality position is incompatiable with a achieving a low relative cost position in an industry.

Other PIMS research (Buzzell and Gale 1987; Gale and Klavens 1985) found indirect evidence supporting this view. Buzzell and Gale (1987) found high quality to be closely related to high market share. In effect, a strategy of differentiation, which relies heavily on higher quality products, is linked to low-cost production, which is based on high market share. Gale and Klavens (1985) similarly found a customer-oriented quality-differentiation strategy could result not only in customer preference and loyalty, but also in increased market share and lower costs.

Quality-Differentiation, Without A Price Premium

A second controversial aspect of Porter's (1980) framework is resolved here. According to Porter (1980), a firm achieves and sustains a differentiation as an above average performer in its industry, if its price premium exceeds the extra costs incurred in being unique. However, companies that are equipped with the processes to produce products economically can pursue differentiation without a price premium.

Sustaining a Quality Competitive Advantage

A quality advantage is valuable only if it can be sustained over the long term. The sustainability of strategy demands that a firm's competitive advantage resists erosion by competitor behavior or industry evolution (Porter 1985). Most competitive advantages can be easily copied by competitors. But competitive advantages based on continuous improvement resist erosion, and are thereby sustainable over time.

Compared to other competitive advantages, quality advantages are difficult to copy for several reasons. Perception of quality take longer to form and carry a heavy psychological component (Schnaars 1991). Often this perception of quality is carried over to other company products. Consider the strong quality image of Maytag's new line of dishwashers, initially based on the performance of its laundry equipment. In this case, the "halo effect" is in action, carried over from Maytag's laundry equipment (Garvin 1984).

Quality advantages are difficult to copy when continuous improvement is part of all company operations and of all work unit activities of a company. Improvements may be of several types: (1) enhancing value to the customer through improved product and service attributes; (2) reducing errors and defects; (3) improving responsiveness and cycle time performance; and (4) improving effiency in use of all resources (1991 Malcolm Baldrige National Quality Award Guidelines). Hence, management

must improve all aspects of quality that count in the customer's purchase decision (Buzzell and Gale 1987).

Any competitive advantage, once copied, could no longer be sustainable. In today's competitive milieu, few advantages resist erosion by competitors. However, when a quality advantage is continuously improved, it is sustainable over the long term.

BOTTOM LINE EFFECTS

To be of both research and practical interest to scholars and top management, there must be hard evidence linking quality with the bottom line. Evidence from case studies involving companies and PIMS studies suggest that quality raises ROI by lowering costs, increasing sales, and improving the firm's competitive position (Buzzell and Gale 1987; Demings 1986; Gale and Klavens 1985; Ishikawa 1985; Phillips, Chang, and Buzzell 1983; Shetty and Beuler 1983; 1985). These relationships are discussed in this section.

Quality and Profitability

Many case histories suggest that a strategy for product and service quality is profitable. Though, few large-scale studies measure the impact of quality on profitability. Two exceptions are PIMS and Peters and Waterman. These two studies are described here.

Peters and Waterman. In studying well-managed companies, Peters and Waterman (1982) concluded that

the most profitable American corporations focus on product and service quality. Companies like Hewlett-Packard, IBM, Marriott, Procter and Gamble, Johnson and Johnson, Merck, and Walt Disney not only provide quality products and services, but also rank in the top among their respective industries in at least four out of six financial criteria (e.g., average return on equity, and average return on sales) over a twenty-year period.

PIMS. This large-scale study involving 3000 business units, provides more quantitative data concerning the relationship between quality and profitability. Their approach to assess relative quality is similar to the "multi-attribute" methods used in marketing research.

The PIMS studies document empirically a positive linkage between perceived quality and profitability. In the book, The PIMS Principles, Buzzell and Gale (1987, p.7) summarize the relationship between quality and business performance as follows:

> In the long run, the most important single factor affecting a business unit's performance is the quality of its products and services, relative to those of competitors. A quality edge boosts performance in two ways:
>
> In the short run, superior quality yields increased profits via premium prices. As Frank Perdue, the well-known chicken grower, put it: "Customers will go out of their way to buy a superior product, and you can charge them a toll for the trip." Consistent with Perdue's theory, PIMS businesses that ranked in the top third on relative quality sold their products and services, on average, at prices 5-6% higher (relative to competition) than those in the bottom third.

> In the longer term, superior and/or improving relative quality is the more effective way for a business to grow. Quality leads to both market expansion and gains in market share. The resulting growth in volume means that superior-quality competitor gains scale advantages over rivals. As a result, even when there are short-run costs connected with improving quality, over a period of time these costs are usually offset by scale economies. Evidence of this is the fact that, on average, businesses with superior quality products have costs about equal to those of their leading competitors. As long as their selling prices are not out of line, they continue to grow while still earning superior profit margins.

Besides greater profitability, Buzzell and Gale (1987) suggest these additional benefits accruing to businesses that offer superior perceived quality: stronger customer loyalty; more repeat purchases; less vulnerability to price wars; ability to command higher relative price without affecting share; lower marketing costs; and, shared improvements.

The PIMS researchers also examined the joint effect of relative market share and relative quality on profitability. Their finding: "Businesses that have both larger share and better quality than their leading competitors earn ROIs that are dramatically higher than those of businesses with small share and inferior quality (Buzzell and Gale 1987).

Quality, Sales and Market Share

Evidence from PIMS shows that high-quality product and services increase sales and market share (Schoeffler, Buzzell, and Heany 1974). The PIMS study suggests that businesses that improved quality increased their market

share five or six times faster than those whose products declined in quality, and three times faster than those whose relative quality was similar to those competitors.

Quality improvement is a powerful means of building market share. In examining the relationship between advertising, price, product quality, and market share, researchers showed that changes in product quality had the strongest relationship to changes in market share; advertising had only a modest relationship to share changes; and, price changes had no relationship to share changes (Buzzell and Wiersema 1981)

Quality and Growth

Aside from profitability, quality is also related to growth, another key dimension of business performance, through the impact of quality on perceived value (Buzzell and Gale 1987).

Value is the linkage between quality and price. A customer who gets superior quality at a low price gets better value, whereas a customer who gets inferior quality at a high price gets worse value. Superior and/or inferior quality is determined by the customer. Thus, quality is whatever the customer says it is, and the quality of a particular product or service is whatever the customer perceives it to be.

The perceived relative value of the total package of products and services effects the customer's behavior in the marketplace, as well as competitive success. In

most markets there are a variety of value positions and product positions that a competitor may adopt. A competitor may offer average value by offering comparable quality at a comparable price, by offering good quality but charging a premium for it, or by discounting for inferior quality. These three forms of average value correspond to three product positions respectively: undifferentiated, premium, and economy. When perceived relative quality and price are 'out of balance', a competitor adopts either a high relative value position (better quality than competitors at the same or lower price), or a low relative value position (worse quality at the same of higher price).

The PIMS data base yields important insights into the effects of value on business performance. Businesses which offer average value at the premium end of the market show the highest rate of profitability, on average. Surprisingly though, better-value businesses (superior quality, but no price premium) are nearly as profitable (Buzzell and Gale 1987).

Quality and Cost

By moving from inferior to superior quality positions, the cost of quality tends to reduce. The cost of quality has been defined as the sum of all costs associated with maintaining quality standards during production and the external costs of warranty and liability claims associated with defective products.

Quality reduces costs by: reducing scrap, rework, additional labor, work in process, inventory, material handling, capital equipment, warranty and liability claims; and, improving the utilization of tools and product equipment (Shetty 1987).

Seldomly do firms calculate the real cost of poor quality. Firms that do find the cost reductions to be astonishing. James Harrington, an IBM quality manager, claims that about 25 percent of manufacturing and administrative time is diverted to repairing defects and correcting errors. He estimates that eliminating these losses could increase output by more than 25%. Hence, cutting the cost of poor quality can lead to a comparable increase in profitability (Shetty 1987).

Crosby (1979) argues that "doing quality right the first time - reduces costs and raises productivity." Wiping out defects or errors reduces labor and/or machine hours. Reducing scrap and waste lowers the cost of material. Fewer warranty claims decreases the material and labor required to fix defective products. Lowering service costs cuts labor costs. Issuing correct design and development specifications the first time raises productivity (Shetty 1987).

CHAPTER 3

RESEARCH METHODOLOGY

Though the marketing discipline has recently directed attention to quality, most of the work in that area has centered on product and service quality and customer satisfaction (i.e., the results). Comparatively less attention has been devoted to the conditions and processes that improve the product and service quality.

As a result, the academic literature in marketing has addressed the second half of the quality equation: the results; thus, neglecting the first half of the quality equation, which focuses on the conditions and processes that improve product and service quality. By focusing not only on results, but also on the conditions and processes that lead to results, higher levels of quality excellence can be achieved.

The academic literature in marketing has taken a narrow view of quality. This dissertation attempts to remedy this omission by examining the broader concept of "total" quality. Total quality adds to former definitions of product and service quality the element of continuous

improvement of all company operations and activities to achieve quality excellence and sustain competitiveness.

The objectives of this study are twofold: (1) to provide a rich and more robust description of quality than currently exists; and, (2) to compare firms beginning their quality improvement efforts (i.e., quality-starters) with those recognized for quality achievements (i.e., quality-advancers).

SAMPLE

The sample consisted of 54 high level executives, corporate vice presidents, senior vice presidents, and directors of quality from a broad spectrum of product and service companies in the United States. A total of 50 organizations were included in the sample; multiple individuals were interviewed in certain organizations. These organizations are listed in Exhibit 4.

Executives were recruited through quality forums, conferences, seminars, and referrals. Of the 54 executives recruited, 27 held engineering degrees, of which 2 were doctoral degrees; 2 held accounting degrees; 25 held master degrees in business administration; 7 held master degrees in management, human resources, or public policy; and 2 held master degrees in the sciences.

Organizations of 9 participants represented consumer products, those of 28 represented industrial products, those of 12 represented services, and those of 5 represented retail and wholesale distribution.

Organizations were classified into two groups. Organizations of 24 were in the initial stages of quality improvement efforts, 6 were in intermediate stages, and 24 were widely recognized for their quality achievements.

EXHIBIT 4

ORGANIZATIONS

Air Products	Marriott
Allied Signal	McCarthy Farm
American Express	Motorola
American Tobacco	Next Computer
AT&T	Olin
Boeing	Pacific Bell
Cadillac Motor Company	Pitney Bowes
Colgate	Reynolds and Reynolds
Conrail [a]	Rowlins
Consumer Goods Company	Sarah Lee Hosiery
Controlled Data	Shell Oil, Chemical Division
Corning	Sonoco Products
Dunlar Tire	Southern Pacific
EG&G	3M
Federal Express	Tandem Computers
Florida Power and Light	Target Stores
Ford Motor Company	Tetley Tea
Globe Metallugical	Travelers
Hewlett-Packard	Union Pacific
Honeywell	U.S. Dept. of Agriculture
Hughes Aircraft	U.S. Postal Service
Industrial Goods Company	U.S. West
IBM	Wallace Company, Inc.
J&J, McNeil Specialty	Westinghouse
L.L. Bean	Xerox Corporation

[a] Names of several organizations were omitted to assure anonymity

MEASURES OF TOTAL QUALITY

Three independent criteria seemed to most clearly differentiate the two groups of firms: (1) the Malcolm Baldrige National Quality Award, (2) a Quality Recognition Scale, and (3) Self-Classification.

Malcolm Baldrige National Quality Award

"The Malcolm Baldrige National Quality Award is an annual Award to recognize U.S. companies that excel in quality achievement and quality management" (1991 Malcolm Baldrige National Quality Award Application). Thus, award recipients were assigned to the group of firms recognized for quality achievements.

The award application process is rigorous and extensive. Companies participating in the Award process submit applications that include completion of the Award Examination. In responding to quality criteria, applicants are expected to provide information and data on their quality processes and quality improvement. Information and data submitted must be adequate to demonstrate that the applicant's approaches could be replicable and adapted by other companies.

Wide margins of safety are built into decisions made by the Panel of Judges at three stages: (1) after the first stage review; (2) after the concensus review; and (3) after initial review of site visit reports. The judging procedures ensure that applicants are not elimi-minated upon small differences in scoring. The purposes

of the site visits are to verify the information provided in the Application Report and to clarify issues and questions raised during the review of the report. At every stage, the judges' decisions are made on a category by category (Manufacturing, Service, and Small Business) basis to ensure that comparisons take place among applicants in similar businesses.

The Board of Examiners comprises quality experts selected from industry, professional and trade associations, universities, health care organizations, and government agencies. Those selected meet the highest standards of qualification and peer recognition. All board members take part in a preparation course that includes instructions on how the key business factors should be taken into account by evaluations. The preparation course includes study materials on manufacturing and service companies. Assignments of board members to applications are made to provide the best matches between examiners' experience and the business of the applicants.

Quality Recognition Scale

A Quality Recognition Scale was adapted from a widely cited and used opinion leadership scale for assigning respondents to groups. The classic 1940 voting study conducting by Lazarsfeld, Berelson, and Gaudet revealed that:

> Common observations and many community studies show that in every area for every public issue there are certain people who are most concerned about the issues as well as most articulate about it. We call them "opinion leaders."

Surely, opinion leaders should be found among quality experts.

The business press frequently repeats that high level executives of organizations recognized for quality achievements are concerned about quality and are knowledgable on the subject. Therefore, the underlying assumption is that firms recognized in the press for quality achievements are more quality oriented than firms that are not. Executives of quality firms are more willing to share information because of their involvement.

A Quality Recongition Scale was developed as an objective, independent criteria for classifying companies into the two sub-sample groups. Unlike the opinion leadership multiple question approach (King and Summers 1970), the evaluation of opinion leadership activity is based on five recent articles in trade magazines and business periodicals that describe the quality process within the firm. These articles were used to answer seven questions.

In questions (5) and (6) of the quality recognition scale, an additional response category was added to the traditional opinion leadership scale (King and Summers 1970). The marketing literature on opinion leadership suggests that opinion leaders tend to ask for as well as

give information. The Quality Recognition Scale is shown in Exhibit 5.

Companies that scored high on the Quality Recognition Scale were placed in the group characterized by firms recognized for quality achievements. High scores (i.e., 14 or 15) on the Quality Recognition Scale suggests both (1) higher recognition for quality improvement efforts and (2) opinion leadership. In contrast, companies that scored low on the Quality Recognition Scale were placed in the group characterized by firms beginning their quality improvement efforts. Low scores (i.e. 6 or 7) on the scale suggest low recognition for quality improvement efforts.

EXHIBIT 5

QUALITY RECOGNITION SCALE

---

1. In general do business periodicals/trade magazines like to talk about the QUALITY of Company X?

   No _____ 0
   Yes _____ 1

2. Do the periodicals/trade magazines give very little information, an average amount of information, or a great deal of information about the QUALITY of Company X?

   They give little information _____ 1
   They give average information _____ 2
   They give a lot of information _____ 3

3. During the past six months did any business periodical/trade magazine make reference to the company's continuous drive for leadership in QUALITY?

   No _____ 0
   Yes _____ 1

4. [Based on the literature] Compared to other companies noted for their QUALITY, is Company X less likely, about as likely, or more likely to be asked for advice about QUALITY?

Less likely to be asked	_____	1
About as likely to be asked	_____	2
More likely to be asked	_____	3

5. [Based on the literature] If other companies were to discuss QUALITY, what part would Company X play? Would Company X listen to other firms' quality ideas, or would they try to convince them of their ideas?

Listens to quality ideas	_____	1
Convinces of quality ideas	_____	2
Does both	_____	3

6. [Based on the literature] Which of these happens more often? Do other companies tell Company X about QUALITY, or does Company X tell other companies about QUALITY?

Other companies tell about QUALITY	_____	1
Company X tells about QUALITY	_____	2
Both happen	_____	3

7. [Based on the literature] Do the business periodicals/trade magazines give the audience the impression that Company X is regarded as having a reputation for QUALITY?

No	_____	0
Yes	_____	1

Self-Classification

In many of the interviews carried out, executives admitted to either being in the elementary stages of a quality improvement efforts, or not having begun thinking in terms of quality. This provided a third criteria for differentiating between the two groups of firms. The organizations of such executives were assigned to the group characterized as those in the initial phases of quality improvement efforts.

Convergent Validity

The three measure of total quality concur, implying a high level of convergent validity. The Malcolm Baldrige National Quality Award measure corresponds with high scores (i.e., 14 or 15) on the Quality Recognition Scale. The Self-Classification measure conforms with low scores (i.e., 6 or 7) on the Quality Recognition Scale.

DATA COLLECTION

While there has been a strong practitioner interest in "total quality," very little attention has been given to it in academic literature. Consequently, we know relatively little about how various aspects of "total quality" are interrelated. Nor do we understand how aspects of "total quality" differ in companies beginning their quality improvement efforts from those having achieved quality recognition. This state of affairs suggests the appropriateness of an exploratory research

design that prioritizes discovery over confirmation (Deshpande 1983; Kaplan 1964).

This research employs a qualitative approach to examine the broader concept of "total quality." The study reported here supports the application of qualitative methodology for interviewing leading influentials in a field, which cannot be duplicated using any other methodology. When interviewing leading influentials, issues like sampling reliability or projectibility are generally not of concern because participants represent a relatively small and select group of influentials and may themselves constitute a consensus of the target population (Goldman and McDonald 1987).

INTERVIEWS

Fifty four interviews were conducted, each lasting 45-60 minutes. The interviews were carried out in person and over the telephone. Respondents were told of the study's purposes and that the interview would be audiotaped and assured of anonymity.

The interviews at first focused on the following categories of quality examined in the literature review: quality definitions, leadership, strategic quality planning, human resource utilization, quality assurance, quality results, and customer satisfaction. The final part of the interview focused on two rather controversial issues in the popular press: foreign competition and the Malcolm Baldrige National Quality Award.

The interviewer is never either totally active or passive in qualitative interviews but is involved as an integral part of the research (Belk, Sherry, and Wallendorf 1988). An effort was made to ensure that the questions were kept as neutral as possible during the interviews. All interviews were conducted by the author. The format of the interview was designed to be very flexible, allowing interviewees as much freedom as possible to express their views on quality.

DISCUSSION GUIDE

A discussion guide was utilized in the study for the purpose of establishing general structure for the interview and to ensure converage of all areas.

Categories

In constructing the discussion guide, the questions were organized in nine categories (topics), discussed earlier in the literature review. A brief review of these categories is provided here.

Quality Definitions. Current quality definitions, changes in definition of quality, future definitions of quality, and key ingredients to be quality company.

Leadership. Leadership, quality values, culture, and public responsibility.

Strategic Quality Planning. Strategic quality planning process, components of strategic quality plans, and competitive comparisons and benchmarks.

Human Resource Utilization. People policies, reward and recognition, empowerment, employee involvement, teamwork, and quality education and training.

Quality Assurance. Design and introduction of quality products and services, process quality control, continuous improvement of processes, and quality assessment.

Quality Results. Product and service quality, quality levels and improvement, and current quality level comparisons.

Customer Satisfaction. Commitment to customers, customer requirements and expectations, customer relationships, customer service, complaint resolution for quality improvement, methods of customer satisfaction, and customer satisfaction comparisons.

Foreign Competition. U.S. corporate challenges in the 1990s and their ability to effectively compete with foreign competitors.

Malcolm Baldrige National Quality Award. Overall effects of the award, impact on firm, assessment of criteria and award system, and gains in applying and winning.

Questions

A series of open-ended questions covered each of the nine categories in further detail. The format of the discussion guide was designed to be very flexible and to allow for probing where necessary.

While the questions provided a structure for each interview, it was frequently necessary to explain and clarify some questions, as well as probe deeper with additional questions to elicit examples, experiences, illustrations, and other insights. The discussion guide used in this study is presented in Exhibit 6.

EXHIBIT 6

DISCUSSION GUIDE

I. INTRODUCTION (AND WARM-UP)

A. Introduce myself and my role.

B. Tell participant his/her role.

C. Identify tape recorder.

D. Have participant introduce him/herself (i.e., company, type and years of experience with company, current position, responsibilities, etc.).

E. Describe the basic purpose of the discussion.

II. QUALITY DEFINITIONS

A. What is quality?

B. Has the definition of quality changed over the years? How? What definition of quality do you expect to become prevalent in the future?

C. What are the key ingredients to be a quality company?

III. LEADERSHIP

A. How long have you been involved in quality? What is your approach to building quality into the company?

B. Can you tell me about your company's "quality values"? In your opinion, what is the impact of attempting to build "quality values" into a company?

C. How does the company integrate its quality values into day-to-day operation?

D. A recent Gallop Poll commissioned by Phillip Crosby Associates surveyed CEOs on the quality of American products and services (Fortune, September 24, 1990). The poll revealed that in order to improve quality, American firms need to develop a corporate culture based on quality.

What does it mean to have a culture based on quality? What kind of corporate culture do you find necessary to be a quality company? In your opinion, what is the impact of attempting to build a quality culture into the company? Has your company developed a culture based on quality? Can you describe that culture?

E. In general, in what ways is quality promoted? Does the company do anything in regard to the Community? Governmental organizations? Trade? School? Any other group?

F. Are your employees involved in quality-related activities? What quality-related activities are your employees involved in? Probe.

IV. STRATEGIC QUALITY PLANNING

A. Do you develop strategic quality plans? How do you develop these plans? What kind of information and analysis do you use in planning? How do you determine projected or potential improvements in quality?

B. How do you envision strategic quality plans? In your opinion, what companies out there develop good strategic quality plans? What are the components of strategic quality planning?

C. Do you compare your products, services and practices against your competitors? What approach do you use for such quality-comparisons? Can you describe this approach? What exactly do you compare and with whom do you compare (i.e., how many competitors)?

V. HUMAN RESOURCE UTILIZATION

A. I've noticed that the "Human Resource Utilization" category is worth 150 points in the Baldrige Award. Why is this category considered to be so important?

B. What "people" policies do you use to improve quality, productivity, and customer satisfaction?

C. How do you encourage your employees to contribute to improvements in quality? Do you recognize and reward your employees' contributions to quality? Probe.

D. What is empowerment? Is empowerment important for improving quality? How?

E. How do you get your employees involved? That is, do you employ strategies for increasing the involvement, effectiveness, and productivity of your employees? Can you tell me about these strategies?

F. Do you encourage team work? How?

G. Do you have any type of quality education and training for your employees? Probe. Why is it important to educate and train employees?

VI. QUALITY ASSURANCE

A. What approaches do you use for assuring quality in the design and introduction of products and services? Are steps taken in design to minimize introduction time? What steps are taken in design to minimize introduction time?

B. How do you control the processes which produce the company's products and services? How do you assure that products and services meet design plans and specification?

C. How does the company assess the quality of products and services? Processes? Quality Practices?

D. What approaches do you use to continuously improve products and services?

VII. QUALITY RESULTS

A. Do you use any kind of product and service measures to evaluate quality results? Customer satisfaction? (Key product and service measures are the set of principle measurable characteristics of product and services that best represent the factors that predict customer satisfaction and quality in customer use.)

B. In general, how do you examine quality levels? How do you examine new quality improvement? Do you have basis of comparison (e.g. independent reports, industry leaders, etc.)? Can you summarize trends in quality improvement?

VIII. CUSTOMER SATISFACTION

A. Can you describe the company's commitment to customers? Do you commit to any kind of promises underlying products and services?

B. How do you determine customer requirements and expectations? How do you ensure that customer requirements are understood and responded to? How do you evaluate and improve services to customers?

C. How does the company handle customer problems and complaints? How does the company resolve customer problems and complaints?

D. What process do you use for evaluating the company's handling of complaints for quality improvements? What process do you use for evaluating the firm's handling of complaints for prevention of recurrence of problems?

E. Can you describe the company's methods for determining customer satisfaction? How do you use this information?

F. Do you compare customer satisfaction scores with those of competitors?

IX. FOREIGN COMPETITION

A. With regard to quality, what challenges do American companies face in the 1990s?

B. How do you assess American businesses ability to effectively compete with foreign competitors? Probe. How would you contrast it now? How do you think it will be in five years? In ten years?

X. MALCOLM BALDRIGE AWARD

A. In general, what do you see as the effects of the Malcolm Baldrige Award? Has the award had an impact on your firm? How?

B. How do you view the criteria laid out by the Baldrige award? In your opinion do you feel that there are aspects of quality that are not captured by the Baldrige Award? Is there something missing? In general, do you see any limitations at all in the award system? Probe.

C. Under what circumstances should a firm apply for the Malcolm Baldrige Award? Is there anythin to gain even if you are unlikely to win?

D. What are the benefits for a firm winning the award?

DATA ANALYSIS

Interviews were transcribed from audiotapes. Interpretation was performed in three stages. First, the sentences in each interview were sorted into each group of organizations (i.e., start-up and quality-advancers). under the different themes, since the same topic could have been mentioned at different times during the course of the interview with the respondent.

Second, the themes (for customer-oriented definitions: customer-perceived quality; affordable excellence (value); exceeding customer-expectations; continuous improvement; excitement, surprise, and delight; and so on) were grouped to obtain an overall view of each group of organizations for each topic considered. Thus, individual factors were lost.

Third, the themes of the two groups of organizations were contrasted. In some cases, where comparisons were inappropriate, the themes of both groups of organizations were analyzed as a whole.

CHAPTER 4

ANALYSIS AND DISCUSSION

The objectives of this chapter are twofold. First, this chapter enriches the understanding of total quality. The information obtained from the interviews affords novel insights into the meaning, components, and consequences of total quality. Second, it contrasts quality-starters with quality-advancers. A phenomenological approach was used to assess the characteristics that distinguish the two groups of organizations.

Interestingly, a large number of the insights also pertain to aspects of quality-traditionalists (i.e., organizations characterizes as not having begun their "total" quality improvement efforts). Some of the executives interviewed recounted former quality-related experiences, within the company prior to institutionalizing total quality, and in other corporation, in the course of visits or prior employment.

Emergent themes were identified, and supported with verbatim quotes, with descriptive information pertaining to the executive and organization in parentheses following

each quotation. Names of executives and organizations were omitted to assure anonymity and to allow for fuller and richer comments.

CUSTOMER-DRIVEN QUALITY

Quality reveals itself to be customer-driven. Consistent with the marketing concept, the customer is the end all and be all of a business.

CUSTOMER FOCUS

Without exception, the executives interviewed were consistent in the view that a customer focus is a key ingredient of a quality company. The comments suggest that being customer-oriented involves the entire organization. It also requires being cognizant of customer needs. Together with a customer focus, few executives explicitely mentioned coordinated marketing, long term focus, and profitability as key ingredients of a quality company. This finding is consistent with the components of the marketing concept. The following quotations are representative of these ideas that surfaced in the interviews.

> [A key ingredient is] to understand your market; that is, the present customers and potential customers. To understand what they value and to understand what your competitors in your industry are doing and what world class companies in other businesses are doing with respect to processes and to define a business purpose and mission that your employees can understand and goals for satisfying your customers and begin to deploy those goals and objectives as to meet the customers needs (Director of Quality, Service Company).

> A company must be totally focused on the customer, and that means every single person. Top management must be truly customer focused, making the right kind of decisions that will secure long term profitability, not taking short cuts that might hurt the customer or business in the long run, such as cutting off R&D, money, not spending enough money on training, advertising, etc., etc. Having a long term vision of where the company wants to go and making sure they are totally focused on that vision and that of course means taking the right actions that will promote that at all times. Not setting off signals that are not in line with what they are saying. Then of course it has to be all prevasive so it has to entail and embrace the whole quality issues and embraced by every single employee. I think it takes knowledgeable people, knoweldgeable about the business, and well trained people in all type of skills including analytical skills and using that data for the best purposes for the customer and reducing expenses in an intelligent way so you can again improve the value at the price you are charging. Reducing the expenses or increasing perfect value for the customer (Senior Vice President, Service Company).

Without exception, the executives stressed the importance of empowering employees down through the ranks to be customer-driven. Importantly, empowerment gives employees the authority to act on behalf of the customer. As the following executives noted:

> The customer-first philosophy empowers employees to act responsibly in the customer's best interest. The goal becomes the primary objective of your quality process, built into plans and daily responsibilities of every manager, every employee (Corporate Director of Quality, Industrial Products Company).

> Empowerment is when the front line people that have to deal with customers have the knowledge to respond quickly to what the customer needs to satisfy. It is essential. No company can figure out exactly what each customer needs nor anticipate all the conditions that can occur. Therefore you need a thinking employee not a robot responding to that. You can't just plan that in advance... (Director of Corporate Quality, Industrial Products Company).

It's impossible to improve quality without empowerment because you have to ensure that your people can do whatever it takes to please your customer, and there are no policies, or procedures that have been written to ensure that employees can meet individual customer needs at any unique time, for any unique reason. There are no policies to be written in any unique case (Senior Vice President, Service Company).

You can't make a quality product, or deliver a good service if the people don't know what to do unless they are told. All the employees have to know what their job is and what they need to do to make a quality product for delivery of a good and service. That to me is the key (Corporate Director of Quality, Industrial Products Company).

To make a company customer driven; that means that every employee adopts the attitude of total customer satisfaction. Key elements include: empowerment of employees down through the ranks, to be customer driven (Vice President of Continuous Quality Improvement, Service Company).

QUALITY DEFINITIONS

Without exception, the executives interviewed were consistent in the view that the customer is the ultimate judge of quality. Definitions of quality begin with the premise that quality "lies in the eyes of the beholder." Individual consumers are assumed to have different wants and needs, and the products and services that best satisfy their needs, requirements, and expectations are the ones they regard as having the highest quality. The following quotations are representative of these ideas:

Quality for many is in the eye of the beholder. What might be quality to me may not be quality to you because our needs, requirements, and expectations are different (Administrator, Service Company).

> Quality is defined more and more by the customer. The customer has the final say (Vice President of Marketing, Distribution Company).

Beyond Satisfying the Customer

As the interviews progressed, it became increasingly clear that quality extends far beyond satisfying the customer. Many core themes underlie the customer-driven definition of quality.

Customer-Perceived Quality. Few executives indicated that quality reflects customer perceptions. As two executives noted:

> The perceptions in the customer mind is the only thing that counts. So quality is what our customer says it is (Vice President of Quality, Industrial Products Company).

> Meeting customer requirements; how customer perceives we meet his needs (Vice President of Marketing, Distribution Company).

Affordable Excellence: Value. Several executives defined quality in terms of costs and prices. Consider these comments:

> Quality is defined by the customer. Customers want products and services that meet their needs and expectations at a cost that represents value (Corporate Director of Quality, Consumer Products Company).

> Quality is meeting the customer's requirement at a price that represents value. Meeting or exceeding customer needs at affordable costs (Corporate Manager, Industrial Products Company).

Exceeding Customer Expectations. Without exception, executives viewed quality as dynamic, rather than static. As customer expectations change, so does quality. The following quotations are illustrative:

> Quality is exceeding the expectations of the customer and all the components to do that (Vice President of Quality, Service Company).

> Putting the processes and systems in place that allow our employees to exceed customer expectations (Vice President of Merchandising, Planning, and Control, Distribution Company).

Excitement, Surprise, Delight, and Bewitchment. Several executives viewed customer satisfaction as a starting point for defining quality. The executives stressed the importance of "exciting," "surprising," "delighting," and "bewitching" customers, by providing them with unanticipated product and service benefits. As two executives noted:

> I define quality first and foremost by getting to know each clients needs, aspirations, goals, and finding out how on an individual basis and as a group basis I could do anything to please that customer and most important we often use the word delight and suprise the customer (Senior Vice President, Service Company).

> The product we produce has to be one that delights the consumer. Consumer satisfaction is not good enough. We want to excite, bewitch, and delight the consumer with our product (Vice President Corporate Quality, Consumer Products Company).

Delivering Solutions. An important idea expressed by few executives is that quality delivers solutions to

problems. As the director of market-driven quality in an industrial products company described:

> Quality is delivering solutions that customers require every time, defect free in a consistent manner.

Conformance to Customer Expectations. The findings suggest that the traditional definition of quality changed from "conformance to requirements" to "conformance to customer expectations." Additionally, the focus shifted from the producer to the customer. A manager of quality improvement of an industrial products company described the change.

> Quality is conforming to requirements, but requirements from the standpoint of customers needs, not the producers. In short, quality is conforming to customer expectations.

Consistency. Few executives emphasized the importance of delivering quality that is consistent every time. Consistency is the extent to which a product is defect free, timely, efficient, and effective. Accompishing this objective requires doing the right things right the first time, on time, and every time. As the following executives noted:

> Quality is meeting customer requirements. That is, quality in itself is meaningless, endless it is aiming at that. Understanding the requirements of the marketplace, to be able to react to those requirements - to deliver a defect free, a timely, consistent perfection. (Director of Quality, Industrial Products Company).

> Quality is defined as consistent conformance to the customer's expectations. More broadly than that, we realize that quality means consideration of how efficiently you do a job. The customer many not care how much money you waste on the production of the final product as long as it is on time, the price is right, and performance is excellent. Within the river of quality we recognize doing the job in such a way that it doesn't have to be redone. Doing it right the first time, efficiently and effectively. Doing the right things to satisfy the customer (Corporate Quality Director, Industrial Products Company).

> Quality is meeting customer requirements, satisfying your customer by doing the right things right the first time, on time, and every time and continuously trying to improve on that because it's customer satisfaction that is the issue (Senior Administrator, Service Company).

Future Quality Definitions

The discussions with executives indicated that future definitions of quality are expected to become more customer-driven, dynamic, and anticipatory.

More Customer-Driven. In the future, quality definitions will become truly customer-driven. Though assessment of customer expectations is the cornerstone of quality, defining expectations may not be simple. Given this, in many cases, companies define quality jointly with customers. One consequence is that businesses deliver products and services which fail to meet customer expectations. Moreover, businesses lose grip on what customer-driven really means. Businesses interpret customer-driven to mean that the customer is always right, when not.

In the next evolution, the executives expect companies to come to a better understanding of the customer,

and to deliver products and services that exceed their expectations. Ultimately, quality will be defined solely by the customer. The following quotations are representative of these ideas that surfaced in the interviews.

> I think there may be additional evolution. It appears to me very clear that the intense focus on the customer will be there. I could see that throughout this decade now we're just entering our business units. We're in various stages of coming to grips with the customer driven in that sense of listening effectively to our customer. So I don't think we are going to go through a radical change in our definition of quality. I think it will be centered around the customer. Continuous improvement in everything we do aimed at meeting or exceeding customer expectations (Vice President of Quality, Industrial Products Company).

> There may be a degree of quality is a dimension that comes in, quality is satisfying the customer. The problem with that is that although it may be true, it starts getting to a point that it does not have much specificity. I think it is downsided, people are confused on what to do from there, is the customer always right, whatever the case may be (Manager of Quality Improvement, Industrial Products Company).

> A definition of quality that will be defined more and more by the customer. The customer will have the final say (Vice President of Marketing, Distribution Company).

> The definition we now have will remain, but we will come to understand it better. Especially, I think in the area of customer expectations we have a lot to learn. I can tell you right now, it is a matter of really understanding what is important to the customer, and then deliver a product or service that meets those expectations (Corporate Director of Quality, Industrial Products Company).

> I think we're just on the tip of the iceberg in this customer satisfaction type of thing and I think it's going to be much more customer oriented in the future (Director of Quality Services, Industrial Products Company).

Dynamic and Anticipatory in Nature. Without exception, executives viewed quality as dynamic and anticipatory, rather than static. As customers' requirements change, so must quality. To anticipate customer requirements, it is imperative for companies to stay abreast of changes, trends, and forces in the industry and environment at large that may affect expectations of quality. The following statements illustrate these ideas.

> One that would be a complete obsession with satisfying the customer. I think there will probably be some more sophisticated iteration that will come right after this, such as anticipating customer needs, and being ahead of the customer, trying to satisfy current requirements. I think as we become more sophisticated and be in touch with customers and with his or her requirements the next generation of definitions will come into play. I'm being much more anticipatory; and, even to mold customer requirements by putting options out there that the customer hadn't even thought of, will help define the directions of standards (Vice President of Quality, Consumer Products Company).

> The uniform definition I don't expect to change; peoples' interpretation of what that means will change somewhat. I think we share in meeting customer requirements, or delighting the customer, or provide attractive quality. It is necessary to anticipate customer requirements (Vice President, Industrial Products Company).

> Quality is not a static value in itself, but is relevent to something and in my mind its only relevancy is to the customer. If you don't look out to the customer, quality is absolutely meaningless. It's like a vase which is beautiful but the beauty is in the eyes of the beholder. That keeps changing. That's the moving of the quality (Director of Market Driven Quality, Industrial Products Company).

The notion of anticipating customers' requirements is important for two reasons. First, it takes years for

an organization to develop a new product offering (Kohli and Jaworski 1990). Second, it allows for companies to gain a competitive advantage by delighting customers with an extra bundle of benefits.

TOTAL QUALITY

Total quality focuses on satisfying customer requirements and expectations through continuous improvement of all companywide activities. Quality extends well beyond product quality to include every function of the organization. As one executive noted:

> Quality is the entire range of activities we need to do to satisfy the customers requirements and expectations. That means we need to go beyond product quality, we need to define the entire range of transactions that we have with customers and do good quality work (Corporate Director of Quality, Industrial Products Company).

Importantly, each member of the work force has to understand how his/her task contributes to quality and customer satisfaction. Several executives went to extreme lengths to stress, for example, the importance of billing, delivery, and customer service in affecting quality and customer satisfaction. As these executives described:

> People have to understand what customer driven means. People have to adopt personal approaches to satisfying the customer. The employee at the customer service center can't let the phone ring off the hook. They have to be polite, even when they have a cold. People have to adapt a philosophy of extending themselves, understanding these values and driving for commitment (Vice President of Continuous Quality Improvement, Service Company).

> Quality starts very broad, however the customer defines it. Quality is not just product quality, it deals with the whole gamet of the organization, starting from answering telephones in a timely manner, to requirements of a service, to expectations of customers (Corporate Vice President, Industrial Products Company).

The Culture of Total Quality

A total quality culture, like the market-oriented culture (whose beliefs and values are consistent with the marketing concept), holds that consumers are the end all and be all of a business. The executives described a total quality culture as follows:

> A quality culture is that you really got to believe, starting with the customer, and commit all your resources to satisfy your customer. There can't be any question in anyone's mind. Quality must be the overriding consideration, whenever you face the tradeoff. The job of every employee must be satisfying the customer (Vice President of Total Quality Management, Distribution Company).

> First and foremost that everything people do is with a yardstick. How does any given action or decision affect the final customer for the product. A corporate culture based on quality is having the customer in front of you all the time (Corporate Manager, Industrial Products Company).

> All your actions have to based on consumer needs... You're constantly revealing your customer needs and wants, you are constantly assessing priorities, and prioritizing your processes, and weeding out those that are not necessary. Everyone from the chief executive officer to production and distribution has to constantly evaluate what they do to satisfy the customer (Director of Quality and Productivity, Consumer Products Company).

> It is an obsession with meeting the requirements of customers. That is the kind of focus you talk about with what you refer to as a quality culture (Vice President of Quality, Industrial Products Company).

The Concept of the Customer

Total quality reveals itself to be customer-driven. As a core value, the customer becomes paramount to the culture of total quality. The concept of the customer includes both internal and external customers.

Internal Customers. The concept of internal customer introduces the notion that everyone in an organization has a customer. The internal customer refers to employees and managers within an organization. The following quotations are illustrative.

> We define customer requirements in terms of big 'C', the external customer, and little 'c', the internal customer. We don't want to imply that one is more important than the other... We could only satisfy those customers. We meet the requirements right away through the chain (Director of Market-Driven Quality, Industrial Products Company).

> An intense focus on the customer, in that we talk about customers that are internal to the business as well as external revenue producing customers so this notion that everyone has a customer, the next process in the value added chain is in effect a customer (Vice President of Quality, Industrial Products Company).

External Customers. The external customer drives the enterprise. A company depends on external customers to sustain its existance. This explains why companies go to great length to satisfy these customers. The concept of external customer refers to customers, suppliers and society at large. The following quotations are representative of these ideas that surfaced on the interviews.

> [Our value is] to treat the customer as a human being is the "golden rule." We'll do whatever it takes to satisfy the customer. When there is a problem we'll fix it no matter what (Vice President of Total Quality, Distribution Company).

> The company is fifty years old and was founded with an intended belief that our strongest competitive advantage was our flexiblity, speed, and our willingness to do for the customer what our competitors wouldn't: faster, better, more frequently, not necessarily cheaper. So our first value was articulated by the founder and the first value is that the customer is more or the job is more. Whatever the customer or this project requires is your boss. The customer is the boss. We don't exist for shareholders, we don't exist to create good jobs, we don't exist for the community, we exist to serve customers. Quality values were at the beginning, and we existed for customers for more than decades (Corporate Director of Quality, Industrial Products Company).

Partnerships. Depending on the businesses, partnerships can be increasingly important. Employees cannot focus on satisfying external customers without partnerships and relationships. As two executives noted:

> Key in [our] business is that everybody works as partners: our customers, employees, suppliers, shareholders, community, government, peers, everyone. We want to treat everyone like partners because we can't do our job unless there is a partnership there and we want to build long term relationships with partners because we have to work on mutual respect on that regard (Vice President of Continuous Quality Improvement, Service Company).

Broadens the Marketing Concept

The marketing concept, and the total quality concept, define a distinct organizational culture, a fundamental shared set of beliefs and values that puts the customer in the center of every corporate function.

A total quality culture broadens the marketing concept. A total quality culture focuses on "internal" and "external" customers, whereas the marketing culture concentrates solely on the latter. The marketing concept, by itself, cannot achieve customer satisfaction.

The satisfaction of internal customers is paramount to the satisfaction of external customers. Internal customers, like external customers, have expectations. It is imperative for those expectations to be met for internal customers to treat external customers in a superior fashion.

Without exception, the executives interviewed agreed that job satisfaction is essential to achieving customer satisfaction. A satisfied work force extends itself to customers, and adopts personal approaches which result in customer satisfaction. Achieving job satisfaction requires that top management nurture, motivate, empower, and invest in the work force. Ultimately, this leads to quality excellence and customer satisfaction. The following statements are reflective of these ideas that surfaced in the interviews.

> You can't expect employees to treat customers better than how they are treated. So if you want customers treated in a superior fashion, you need to relate and treat your customers in a superior fashion (Vice President of Quality, Service Company).

> How you treat your people, your people will treat your customers. How happy your employees are depends on how satisfied they are (Corporate Director of Quality, Industrial Products Company).

The cornerstone of the company is to invest ourselves in our people and they take care of our customers. We have a kind of nurturing environment. People extend themselves to their subordinates... it is a nurturing environment... take care of our associates so that they will take care of their customers (Vice President of Human Resources and Quality, Service Company).

We work under the principle that says if your employees are not satisfied and effectively motivated and empowered, they are not likely to be effective and fully satisfying your customer requirements no matter how well you produce the product because it is the delivery and the manner in which the orders are taken and certain support that are the key drivers (Vice President of Quality, Industrial Products Company).

One key thing that our management has done in developing our mission and vision is to say that there is a priority of the customer; the external customer which drives the enterprise; but the second most important customer is the employee. Management must recognize that employees have expectations. So when I say that everyone is trying to meet the expectations of custoers, I'm including in that concept that management strives to meet the needs of employees who are management's customers in trying to achieve our objectives with our external customers. You have to have a culture that does that. If you have an employee opinion survey and that survey asks you a question "I am measured and rewarded by how well I meet customer expectations," and the employee answers "100%, I am." I don't how many companies get that. Xerox claims they have 94% favorable response for a question like that. Our company is like a third. If all of your employees can answer yes to that question, you've achieved a quality culture (Director of Total Quality Management, Industrial Products Company).

To have everyone in the corporation say that people satisfaction is what we aim for everyday (Vice President of Quality, Service Company).

Clarifies Tradeoffs

A total quality culture clarifies certain tradeoffs. An example of a tradeoff is to improve profitabili-

ty or to satisfy customers. The following quotations are illustrative of this theme.

> [A total quality culture] adds a whole new dimension. Adds new meaning to everyone's job. It just clarifies a lot of things that are not clearly understood; for example, certain tradeoffs: when do you shut down the operation, do you ship something, you don't ship it (Vice President of Total Quality Management, Distribution Company).

> When you say you are in a quality organization, one that is satisfying customers, you are faced with decisions, to improve your profitability or satisfy your customers (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

> A culture based on quality is how you make your decisions and follow through. In a culture based on quality, for example, you can have a product and decide not to ship it because it doesn't meet quality standards (Corporate Director of Quality, Industrial Products Company).

Continuous Improvement

A total quality culture encourages the continuous improvement of all operations and activities. Culture is a means of achieving a competitive advantage. Thus, a quality advantage may be facilitated by a total quality culture encouraging continuous improvement.

The sustainability of a quality advantage demands continuous improvement and a long term focus. This resists erosion by competitive behavior, by making the imitation of the quality advantage increasingly difficult.

When an organization embraces a philosophy of continuous improvement, the organization moves together in the same direction. As several executives noted:

> Companies wanting to get better have to have everyone pulling the same direction... and I believe there has to be a central long term purpose that goes beyond what anybody's particular job is. And that central long term purpose is improving the quality of the work you do. So if continuous improvement is the fundamental premise of how you build your business, and that is the basic business principle. If that is the policy that is reinforced and confirmed by everything the company publishes, by everything the company does, by the words and actions of the chief executive officer and top management team, when you have the foundation of building a culture based on quality and a foundation for improving the quality of the organization, the ability and capability of the organization. Without that central long term purpose you have people doing their best, but without meaning to do so. They are pulling in different directions and everybody's trying to achieve their goals and objectives independently of each other and you don't have everybody pulling in the same direction. So you don't optimize the system, but suboptimize the system (Vice President of Corporate Quality, Consumer Products Company).

> A commitment to continuous improvement and methodologies that provide consistent, repeatable, predictable ways to improve all processes, not just business processes (Vice President of Quality, Industrial Products Company).

> Continuous improvement recognizes the best, sometimes a corporate obsession. Our excellent standards are always focused on serving the customer (Corporate Director of Quality, Industrial Products Company).

> Must have a philosophy of continuous improvement. A mindset with your people (Vice President of Quality, Industrial Products Company).

Process Management and Prevention

Achieving quality excellence at low cost requires a change from a detection to a prevention system of quality control. The traditional after-the-fact detection method, inspection, is very costly and late for effective process control. With a prevention system of quality control, the

unprogressive objective of meeting customer requirements is superseded with the idea of exceeding customer expectations. As one executive noted:

> Quality is measured by how effectively you satisfy those customer expectations. It is based on a process of prevention rather than inspection and counting errors after the facts... (Director of Corporate Quality, Industrial Products Company).

CUSTOMER ASSESSMENTS

Without exception, the executives interviewed were consistent in the view that the customer assesses quality. Assessments reveal how products function in the customer's environment. Companies depend on customer feedback to evaluate product and service offerings. Acquiring this feedback requires that companies build relationships with customers. The following quotations are representative of this idea that surfaced in the interviews.

> The only true assessment is to understand how they function in the customer's environment, so we try to stay in touch with customers (Vice President of Quality, Industrial Products Company).

> After products and services are shipped we get customer feedback. We for example call every customer after we ship a [product] and call them three months later to see how they like it. We also do follow up surveys (Director of Operations and Applications, Industrial Products Company).

QUALITY MEASURES

Measures of product and service quality begin with the customer. Customer-perceived attributes are transla-

ted into manufacturing- and product- based measures.

Manufacturing-Based Measures

Customer requirements are translated into internal, manufacturing-based measures. The following quotations are illustrative of this idea.

> Product and service measures generally still run around our customer specification and what we do is try to figure out where we are in the area of process capability. We're always trying to enhance that. So that's the primary measure there, based on an audit kind of inspection and a final product and then determining where we are within the customer spec and always trying to enhance the numbers there that are involved in statistics CPK, or CP depending on the customer process capability (Director of Quality Services, Industrial Products Company).

> We use both product and service measures. Our total quality process starts by defining needs and expectations, then our macroscopic measure is how have we met those expectations or requirements and then we have subsidiary measures that break down our process leading up to customer satisfaction. Product and service measures are tailored to the particular product. Again our measure is basically against customer expectations; the other element we put into there is benchmarking; we look at how well we are improving over our competitors (Corporate Director of Quality, Industrial Products Company).

> Some are technical and relate to speed; degree of perfection; the ultimate measure is what customers think of the product or service. The customer is the one that defines quality and the ultimate measure is what he thinks of that. We use internal measures based on absence of errors or rejects, based on perfection (Vice President of Quality, Industrial Products Company).

Product-Based Measures

Product-based measures begin with the customer. The customer delineates the dimensions of product and service

quality, which are then translated into product and service standards. As one executive noted:

> Generally, the [product] analysis could include eight elements, and also the size distribution of the final product... And this is from the customer's point of view (Director of Quality Services, Industrial Products Company).

ROLE OF QUALITY

Over the years, the role of quality has changed in many corporations in the U.S. Traditionally, quality played a limited role in organizations. This still holds true in many quality-traditionalists today. Four core themes surfaced in the interviews: (1) customer focus versus quality assurance; (2) broad versus narrow; (3) dynamic versus static; and, (4) strategy versus function.

CUSTOMER FOCUS VERSUS QUALITY ASSURANCE

Without exception, the executives interviews were consistent in the view that a quality assurance, manufacturing-based view of quality has been replaced with a customer-based definition. Definitions of quality have shifted from the standpoint of the producer, to that of the customer.

Historically, the focus was on conformance to requirements, or absence of defects. Frequently, the traditional focus of quality resulted in products that complied with specifications, but failed to result in

customer satisfaction. When definitions of quality begin with the customer, companies deliver products and services that customers want. The following quotations are representative of this theme.

> In the past people focused on defect free products, they didn't focus on making sure that they are making products that customers want (Director of Quality, Industrial Products Company).

> We used Crosby's definition "quality is conformance to requirements." But when we used that there was a tendency to focus on requirements that were convenient for the producer. So although we still say quality is conformance to requirements, we still introduced that it should be from the customer standpoint (Manager of Quality Improvement, Industrial Products Company).

> Quality used to be regarded as fitness for use and was compared to product specification: upper and lower level of measurement, and if you fell between the two specification limit the quality was considered OK; if you fell beyond the quality specification, the quality was not good... Now we are more interested in how close we are to the center, analagous to the customer's set of requirements (Corporate Director of Quality, Industrial Products Company).

> Historically quality was the absence of defects, but now quality is no longer the absence of defects, but there must be presence of a lot of customer satisfying attributes, that go beyond those defects, not only things that gone wrong but things gone right that must work in a customer satisfying way (Corporate Manager, Industrial Products Company).

> I think the definition has changed a bit. Quality can not live by the law of product specifications, but if you have those requirements defined properly then the definition of quality is conformance to those requirements. Yet you have to be careful in conformance to requirements because you can have specifications wrong for the intended use of the product, completely comply with satisfaction and still not have satisfaction. Now quality has expanded into the service area and all the support that goes along with it (Vice President of Total Quality Management, Distribution Company).

> Quality has changed from a traditional quality control view and has become a lot more customer oriented, at least in the companies that are very progressive in this area (Director of Corporate Services, Industrial Products Company).

> Quality used to be the way we defined it as opposed to how the customer defined it (Vice President of Quality, Service Company).

> We used to define quality as conformance to requirements which focuses on production and defects. Now it involves more customers and primarily focuses on customer satisfaction (Director of Quality Services, Service Company).

> Definition of quality changed over the years. The focus is more on the customer as opposed to the traditional quality assurance perspective (Vice President of Human Resources, Consumer Products Company).

BROAD VERSUS NARROW

With few exceptions, the executives of both quality-advancers and quality-starters defined quality broadly as Big Q. This is in sharp contrast to the traditional view that defined quality narrowly as Small Q. As several executives noted:

> Quality is much broader. We used to think of quality as only meeting customer requirements, not doing any more than the minimum. We also used to think of it as only relating to the product we manufacture and deliver rather than the entire range of transactions (Corporate Director of Quality, Industrial Products Company).

> Quality has broadened from being specifically the details of the product or service pervaded by the company to more recently involving the whole relationship between the supplier and the customer including the quality of the sales force, the quality of the billing, the value of the product divided by the cost, and many other issues the customer considers important (Corporate Director of Quality, Service Company).

Quality is a lot more than the narrow or traditional definition of making products without defect or specification. Quality is really a process philosophy of continuously improving every facet of what the firm does; and it's relations internally and externally with its outside suppliers. Quality has been a virtue in the company for a long time. But it had more of a narrow definition. It moved from a measurement function to a process definition and in that sense it changed from a manufacturing orientation to a companywide orientation (Director of Human Resources, Consumer Products Company).

When we started with quality we were looking at it from the product perspective and over time we started looking into from the perspective of the customer, doing the right things, the right way all the time. The definition of quality has broadened over time. We moved away from a product definition. Product per se is not the basis of differentiating yourself in the marketplace. We feel that competitive differentiation has to come from services and every transaction our customer has with [company]. That's where we are going to be able to differentiate ourselves (Director of Customer Satisfaction, Industrial Products Company).

Definition changed from something that's very hard manufacturing, very product-oriented, to a better understanding that quality has a broader meaning. Quality is not just if we manufactured something that has a hole in it or not, or take a look at the systems and processes that support the people that operate the hard systems. Moved from hard definition of quality to one that is much broader and recognizes quality in everything we do (Director of Quality and Productivity, Consumer Goods Company).

Well [company] is in the control business. In a narrower viewpoint we could look at [company] as delivering a [product], for example. So at one point traditionally, we would think of quality being the reliability of that [product]. Does it do as function? Today we realize that it is much broader than that. We recogize that we have to look at factors as: Are the instructions easy to follow? Does the [product] fit in with the decor at the home? Is it available when people need it? If they have a question or problem? (Corporate Director of Quality, Industrial Products Company).

> In the early 70s and 80s, we defined quality as meeting engineering specification. Quality used to be perceived and defined as product quality and final output only (Director of Quality, Consumer Products Company).

In the course of the discussions, several executives indicated that quality has broadened to include soft elements like people. These executives viewed people as an important component of Big Q. As one executive noted:

> A lot of companies feel like quality is statistical analysis. I believe that you must have the people in the organization totally involved. Statistical process control will not take you there, people will take you there (Executive Chief Officer, Distribution Company).

DYNAMIC VERSUS STATIC

Many of the executives of quality-advancers viewed quality is dynamic. Quality is defined as exceeding expectations or delighting customers. Historically, quality was viewed as static. Meeting customer requirements was key. The interviews suggest that as companies move towards total quality, definitions of quality become increasingly dynamic. As two executives noted:

> The definition of quality for us has changed over the years. In 1980-1981, we had the Phillip Crosby definition, which is meeting customer specification. And the emphasis there was on customer specification. He mainly wrote about product quality. As time passed, our definition has shifted, based on the belief that merely meeting product specification will not be enough in the years ahead that that will be a requirement playing the game. More importantly, one must exceed those product specifications, in particular, satisfying the customer in other ways. To make a long story short, we've come to the definition of delighting customers (Vice President of Quality, Industrial Products Company).

> When I started in the quality field in the early 80s it was conformance to requirement. Today it is more exciting and delighting your customer (Quality Manager, Industrial Products Company).

STRATEGY VERSUS FUNCTION

Few executives indicated that quality has changed from function to strategy. The following quotations illustrate this point.

> Years ago, quality was not a major element in the sense that it was a driving force. We prided ouselves in having good products but wasn't a driver, a central theme (Vice President of Corporate Quality, Consumer Products Company).

> Folks that have been at [the company] for a long time would state that they have felt that they have been in a quality organization all along, but the definition has changed for us because rather than be a platitude, rather than be a goal, a place, or measurement, it is becoming a business strategy (Vice President Human Resources and Quality, Service Company).

LEADERSHIP

Without exception, the executives were consistent in the view that quality implementation rests on the shoulder of top management. Moving towards total quality requires that top management exercise leadership and set the stage for quality. The following quotations are representative of these ideas.

> Culture is something as I see it is defined by the very top of the house to say where this is where we're going... and to have that recognized within and throughout the company so people recognize what it is. And then people have to act on it persistently (Director of Quality, Consumer Products Company).

> Top manager, whether it's a one man show, team, or committee must get religion if you will, and really take a leadership position (Vice President of Marketing, Distribution Company).

> Implementation rests on the shoulder of senior management. The key responsibility lies on them (Vice President Corporate Quality, Consumer Products Company).

> Everyone has to understand what quality means, how it's defined, what the customer is, understand the language, that's not easy to do ... it means doing disparate jobs, some with conflicting goals, having a common language. That's why it has to start at the top and ripple down (Vice President of Marketing, Distribution Company).

THE ROLE OF SENIOR MANAGEMENT

Moving towards total quality requires a change in the role of senior management.

Quality Versus Budgeting

In quality-traditionalists, attention is devoted to budgeting, rather than aspects of quality. As the director of corporate quality services in an industrial products company put it:

> Historically, in most companies senior executives were involved in the financial planning of the company, the budgeting so to speak, very rarely consideration on quality aspects that the company can expect to take into consideration today (Director of Quality Services, Industrial Products Company).

Degree of Involvement

Companies begin the quality process with awareness and extensive efforts to understand the key requirements

for quality excellence. The executives of quality-starters indicated that the key role of senior management is to set the expectations and the environment for quality improvement. An effort is made to communicate quality throughout the organization. A considerable amount of time is spent building the foundational elements of quality, studying the successes of world class companies, and implementing quality awareness and skills training. As several executives noted:

> We visited many quality days: Xerox, Milliken, Corning. We learned what total quality management was all about, came back wrote our vision, goals, and guiding principles for the organization. That's a key element, aligning the organization to be customer driven. We elected a quality council, in charge of designing the education package and deployment strategy, to take quality message top down (Vice President of Continuous Quality Improvement, Service Company).

> We sought out a methodology which was consistent with the way we do things. Some of the teachings that are available to be bought, or read, or whatever, are inconsistent with some corporations, culturally and behaviorally. It is not the way you do things. It wouldn't stand a prayer for successful introduction of the corporation. It would be killed. What we had to find was something that the senior executive would permit would happen; Deming, Juran, and Feigenbaum and the many people who write about quality and the many consultants that are available to sent you their systems, they have extremely valuable insights, but not all of them are behaviorally or culturally compatiable with what the company does. And we had to find something that would work here (Corporate Director of Quality, Industrial Products Company).

> The approach that I'm taking is first to spend a lot of time building the foundational elements of changing the business. We are changing the way we run the business to satisfy customers in superior fashion. Our approach is to spend on laying down the foundation, to get a knowledgeable commitment at the top of the business, and to really understand what this is about. This is

> not a program, this is not the flavor of the month, this is not what's going to be coming around to get us all the best bonus next year, this is a knowledgeable commitment to completely reshape the way decisions are made, how our business is conducted, our whole culture (Vice President of Quality, Service Company).

Moving from quality-starters to quality-advancers requires stronger leadership. Executives of quality-advancers stressed the importance of leaders and coaches, not bosses and managers. Importantly, top management must walk the talk and lead by example. Visible commitment and active involement in quality activities is essential. The following quotations are representative of this theme.

> I'm a cheerleader and a scout looking for better ideas and handling certain external commitments and internal presentations (Vice President of Quality, Industrial Products Company).

> [My approach is] leadership by example in planning and deploying the plan (Director of Total Quality Management, Industrial Products Company).

> You must have strong leadership. Top management are role models in use of quality processes and they drive the quality processes throughout the company (Vice President, Industrial Products Company).

> It can't be something where the chief executive officer or the top officer of the company sends a memorandum that we subscribe to these policies and we expect everyone else to. They need to be out there doing what they are saying; or, "walking the talk" as you often hear these days. They need to be trained along with everyone else and they must be active participants involved in the quality systems otherwise the systems seem to wither on the line. In addition, they have to be very much involved in the quality planning process (Director of Quality Services, Industrial Products Company).

> Quality can't be a memo that is delivered in a memo or video tapes by chief executive officer. The management has to walk its talk. Top management has to be committed... what you have to add to that is that management has to involved, has to understand what it is trying to achieve, so it has that commitment, it has to walk its talk. [Our chief excecutive officer] in a meeting sat through the quality portion of the meeting. He said, quality is right; quality is the things we are doing right to serve the customer and on schedule. He left the meeting saying that the rest of it is going to take care of it by itself (Corporate Vice President and Director of Quality, Industrial Products Company).

> [Leadership must be] very visible, how people act and the way it's practiced. We want leadership at all levels at the organization and we want that displayed through open communication, integrity, and respect for individuals (Vice President of Continuous Quality Improvement, Service Company).

> You must have the buy in of employees and that goes to front line supervision and hourly employees. If they see mixed wavelengths so to speak during the course of a month or a quarter or whatever the period may be, they are not going to buy in to what we say, what we're trying to do. We're really not "walking the talk" so to speak (Director of Quality Services, Industrial Products Company).

Several executives of quality-advancers delineated senior mangements' role to be: leadership, organizational, and educational. Systems and structures to support this role include: a well-trained work force, reward and recognition systems, and effective communication. The following quotations summarize these ideas.

> [Approach is] first leadership, second organizational, third educational. These proceed simultaneously obviously. First to create an organization so that the quality process could be decentralized and internalized, and finally institutionalized in the company to make it as one with line management activities. So that it is invisible. We approached the quality process by

creating an organization that shaddows or mirrors the line organization for every line and staff officer in the company and there is a quality person or manager. So we have a way to speak up and down in the organization, and sideways at the outset. We could improve the communication techniques, to be very fluid, very fast, very flexible using voice mail and group codes, we could speak to each other instantaneously, and talk to all fourteen people all at once. Along with that the understanding that the chief executive officer has to be as knowledgeable as everybody else (Corporate Director of Quality, Industrial Products Company).

I don't work on quality problems. The role of a quality director in a quality company is three things: to lead, to teach, and to audit. My role is deal with chief executive officer and the operating committee to make sure they have an understanding of what is required to satisfy customers... what goal setting ought to be, incentives, leading the discussion and getting the buy in of top people in the organization. We have a [company] University. We spend $60 million on training: reading, writing, and arithmetic all the way to the most sophisticated technical theories you can imagine. Every employee has a minimum requirement of fourty hours, and many obviously have much more. Last year, 2.7% of total payroll was devoted to training (Corporate Vice President and Director of Quality, Industrial Products Company).

Mine is a two prong approach. One, its finding a hot spot or areas where you can use quality or leverage quality to yield short term positive experiences or success stories, while at the same time you are doing significant training at different levels to raise the basic understanding of what it is in the organization and then the planning of how to implement this quality management strategy throughout the organization. You have to have a roadmap to get there. Executing quality takes money, time, and resources (Director of Quality and Productivity, Consumer Products Company).

PARTICIPATIVE VERSUS AUTHORITARIAN

In quality-advancers, the leadership style is characterized as participative, whereas in quality-starters, the leadership style is is characterized as authoritarian.

Trust Versus Distrust

Some executives indicated that moving towards total quality requires that senior management adopt a participative management style, as opposed to the traditional, authoritarian approach. With the old authoritarian management style, managers acted as bosses, which often led to distrust. Under the newer participative management style, top management acts as coach, which results in openness and trust. As two executives noted:

> The culture is that you move from old style management of: 'This is what I say, this is how it's done. I don't care what you say' to a management that says 'Hey, we're all in this together, the mind of me is better than the mind of one; I want you to be totally involved, immersed in this company, in the decision we make, in the direction that we go; and that's the culture I am going to foster; I am not here to manage you, I'm here to lead you. I am here to coach you, nurture you, support you and sustain you, and I know you will lead me in the direction to go.' It boils down to trust. We in this country have not done a lot of things to create a lot of trust. I know in our case when we started asking questions about this system, people here thought this is funny because you never asked about this before. It takes some real small strokes by senior leadership to let people understand that we are changing, there is a new way of doing a business, and that can only be fostered and sustained by senior leadership (Executive Chief Officer, Distribution Company).

> The leadership has to be one that is of a cooperative mass that makes it a leader as opposed to the traditional management approach which is really more of a controller rather than an inspirational coach or helper or participant (Senior Administrator, Service Company).

Flexible Versus Rigid

The interviews revealed that the participative management style promotes the performance of quality work.

As coaches, top management trusts employees to act in the customer's best interest. Flexible approaches are adopted to better satisfy the customer.

In contrast, the traditional, authocratic management style prevents the performance of quality work. As a boss, top management dictates roles. This results in employees adopting rigid approaches that restrain from satisfying the customer. As the administrator of a quality-starter service company described:

> When you start discussing quality all the employees start saying what are you talking about I thought I was a quality person to begin with. There are a lot of high successful people that are quality-oriented that want to do the right thing but throughout the years people got used to management telling them what to do and they have a lot of hidden abilities that haven't been used. Through this quality process, employees start thinking that they are very important to this organization, and every person, from the lowest person in the company to the highest person is important to the whole aspect of a good product and a finished product to the customer ...

As companies move towards total quality, the work-force becomes increasingly sensitive to customers. The reason: employees understand the importance of the customer to the organization. As the director of quality in a consumer products company described:

> When people do things at [company] they do things in quality terms, they are sensitive to customers... sensitive that whatever they do is part of a larger goal of customer satisfaction.

Openness Versus Fear

Few executives indicated that the environment of quality-traditionalists is characterized by fear, whereas the environment of quality-advancers is characterized by openness and trust. As the vice president and product manager in a consumer products company described:

> The culture here is one of the value of the people in the organization to feel free without fearing repermand or loss of job in some cases; to feel free to suggest ways to improve the quality and improve not only the quality but perhaps the productivity and efficiency in the organization, and they know their ideas are important and people will listen to them and act on it. You have to instill the feeling that your goal in life is not only to get more efficiently reduced cost and improved quality but to grow the business. So that your somewhat assured of continuity of employment, you grow as opposed to reducing people through suggestions that might result in efficiencies that would cost workplaces.

Quality Versus Dollars

An important idea expressed by several executives is that quality-advancers focus on quality, while quality-traditionalists focus on numbers and figures. Quality can only become first priority, when top management overcomes the traditional notion of "making the numbers." Focusing on numbers, profits, or dollars, diverts attention away from quality and people, key drivers to the success of an organization over the long haul. The following quotations are representative of this theme:

> I think to have a culture based on quality is that senior management overcomes the old notion that in the end of the month we're going to ship whatever it is out of the door regardless of what quality is because we

have to make out numbers. We've always been in a number driven environment. When it comes time in the end of the month we need to have good numbers. It's generally based on production performance or output so to speak and that could be for a service or for a product as opposed to the quality of the output or the quality of the service. So, the change there is in the culture of the company is that everybody has to accept and understand that quality is the number one thing, and it becomes the driving force in the planning and development of other areas such as budget and what not that never had any input previously (Director of Quality Services, Industrial Products Company)

[A quality culture] a company that feels something else besides money as an incentive, and something else besides discipline as control and leverages that to really optimize human behavior in the sense of loyalty in its people. Another characteristic would be lifetime employment so that an employee knows that if I do my part and get my job done and meet the requirements of my customer, I will have a job here, and not at the whim of some cost cutting, mean cutting, Wall Street Analyst, high up, manager that rolls down a lot of pink slips on a Friday afternoon because we have to lay off 2000 people to meet the numbers. That really erodes your loyalty. So breeding loyalty and a sense of team is a viable ingredient here (Vice President of Quality, Service Company).

There are people that are high up in the business, and they get off on financial results. They don't care where the numbers come from, they just want the numbers, and the rest of the organization feels basically beat up into an undignified role of getting someone else their numbers and in the end you lose them. Pretty soon people come to work and check their brain at the door, they come in they go into the motion for eight hours, they don't own the business, they don't own the customers that would be meaningful because they find that in other parts of their life, zero at work. You reverse all that and you get people on the shop floor acting like they are vice presidents because they are running their task like it is their business ... (Vice President of Quality, Service Company).

In quality-starters, this theme emerged as well. As the senior administrator in an industrial products company noted:

> Any company starting the quality process can't be concerned with the dollars at the moment. You have to get the process going, get their employees trained, and employees going in the right direction.

THE TOTAL QUALITY VALUE SYSTEM

Without exception, in quality-advancers, there is a total quality value system, consisting of values, guiding principles, missions, credos, and visions. In quality-traditionalists, these are non-existent.

Mission statements, credos, visions and values set the stage, vision, direction, and foundation for total quality. Together, they demonstrate a commitment by top management and a corporate dedication to quality. The following quotations are representative of these ideas that surfaced in the interviews.

> Our guiding principles are the foundation of the way we want to act and what we value as important (Vice President of Continuous Quality Improvement, Service Company).

> Values set the stage, they set the vision, they have to be at the company, everyone must know what is expected from them. At the corporate level everyone has to know what the directions are and the particular value. And we have to know that everyone knows them at a uniform fashion. If client is first reponsibility, everyone has to know ... It is a uniform way of everyone thinking in the whole company. It's what unites the whole company. It's the glue that binds the whole company together (Senior Vice President, Service Company).

> We have corporate objectives that the company holds. That provides the guiding light, the company umbrella under which the company operates (Corporate Director of Quality, Industrial Products Company).

We have a very elaborate mission statement that was written by 260 people of our company at the time. Basically it is a value structure; it is a statement of what we believe. We coach people that have any doubt in where to go. It talks about future, long term commitment, people, our customers (Executive Chief Officer, Industrial Products Company).

If you don't know where you're going you're never going to able to get there. And the purpose of having the mission or the vision statement is to get the focus so you know where you're going, otherwise you're just there doing work, and if you have a mission or vision than you might be doing work but at least you know what you're going to achieve (Director of Corporate Quality, Industrial Products Company).

Our focus of quality is job 1. It permeated all our organizations, our reference with our union, and our people in focusing on quality; and, their commitment to it has had a tremendous impact, and the renaissance has been brought on that focus. Without values and guiding principles you cannot support the total quality effort in the company (Director of Quality, Consumer Products Company).

As the interviews progressed, it became increasingly clear that integrating mission statements, visions, credos, and values effectively requires a host of complementary mechanisms. The mechanisms include: business planning, participative management, training, reward and recognition, effective communications, and leadership behavior and actions.

For example, communication may be in the form of written documents (e.g., policy letters) or electronic systems. This fosters integration into day to day operation. The following quotations are illustrative. of this point.

> The only way you can instill values in an organization is to live them day by day. So you have to make sure you've written the words and live by them day by day is a long process... We have made sure that every [company] employee has a copy of our values (Corporate Director of Quality, Industrial Products Company).

> It's one more action that signifies to the rest of the organization that has senior management support, and that is a company strategy when they begin to see it in print and on paper, it becomes that much more tangible to make it solid and believable (Director of Quality and Productivity, Consumer Products Company).

> [You integrate] by making time available so that people talk about quality in a day to day basis ... to talk about quality problems and to surface their ideas for improvements. Create opportunities for people to establish metrics and use control charts. Create better feedback so people know what they are doing (Corporate Manager, Industrial Products Company).

> If you walk around and talk to people you'll hear the values and the mission being said. The reason people are here is exactly why is echoed in mission statement. The mission and values were presented to the whole company, and they are also located in our electronic documentation system. If you want to know something you don't have to go to the library, everything here is done electronically (Manager of Quality, Industrial Products Company).

Importantly, successful integration of mission statements, credos, visions, and values requires that senior management be consistent in actions and behaviors. The following quotations are representative of this idea.

> If you integrate [values] right, it is the day to day operation. It has to do with behavior, how you design the processes of your organization, what's required, what's important... It's like Congress, everybody says they are not doing their job, but Congress is doing their job very well and the reason is the customer of the congress is the people back home. Congress is satisfying those very real requirements from his constituency. The same way the people within an

> organization, they are satisfying what we are asking for, we just don't want to admit sometimes that what we are asking for is with our body language and our daily behavior (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

> You have to set an example and provide the atmosphere and environment for this to work and prove this the way you act (Vice President and Product Manager, Consumer Products Company).

> Quality values on their own are just quality values. The actions speak louder than words. So as long as you say you want people do the right thing, and you walk the talk as the leaders of the company, then it will work. But as soon as you fall down on walking the talk the values no longer mean anything ... You have to make sure that senior management manages by example, by exemplifying all of those values. So that people are led by example, and they know those values because of the fact that their management will act with a high degree of integrity at [company] (Manager of Quality, Industrial Products Company).

It is clear from the interviews that integrating values is imperative for achieving world class leadership. The corporate director of quality in an industrial products company noted:

> I would say it is absolutely vital that companies do that. I don't know of any good company that doesn't have a strong value system. So to me that is a prerequisite to be a world leader.

Values

Values are the foundation of the way individuals act in the business organization. The basic values underlying an organization are built into the corporate mission and goals. Over years, values become the culture of the organization. As the director of quality of an industrial

products company noted: "You can create a value system that becomes a culture, but it takes time."

Values facilitate the move from quality-starters to quality-advancers by giving people the opportunity to change. Values create an environment which is conducive to participation, teamwork, and involvement. This increases the motivation of employees. The following quotations are representative of these ideas that surfaced in the interviews.

> When the values are built in, the company operates under that kind of philosophy, the employees will buy in into what the company was trying to do anyway, and they will take a real genuine interest in making sure that the products that are produced or the services provided are going to be what the customers are going to expect. We had that kind of buy in at [company] and I've seen that kind of buy in automotive companies and the impact of that can be very dramatic especially financially on the company. At [company] we had sales of around $100 million annually and we had documented with good hard numbers about $10.3 million a year in annualized savings. The savings were mostly generated from the ideas of our employees. We had never given them avenues in the past where it was clear to them of how they can contribute and we made it very easy for them. And everybody seems to subscribing to the same set of values and it seemed to work out well. Also, values give employees an opportunity to change (Director of Corporate Services, Industrial Products Company).

> [Values] makes it easy to motivate employees to participate because employees want to do good work, because they are a quality person. Noone says they do lousy work. Most people believe they can do quality and they get frustrated if they can't do quality - if they feel the product they produce is not at the level they would like to see it so that they can put a signature on it - that's called worker frustration. When you motivate employees, the environment must be right, otherwise employees get frustrated (Director of Quality, Industrial Products Company).

> When you instill these guiding principles you give people the chance to change. After all, one of the things you're trying to promote here is trust, and if you'll look at the aspects of trust that means you're going to give people time to change and be understanding ... It's paramount that the employees take ownership of process that we don't have just upper management decide they want to be a quality company, but every employee wants to do a quality job and do the job right way the first time and every time. Another important element is teamwork, multiple people to do the job. And education and training, especially skill training in all quality principles and softer principles; such as, leadership, facilitation, brainstorming, how to work as a team member, honesty, trust and to a great extent moments of truth (Vice President of Continuous Improvement, Service Company).

The basic values underlying total quality management in quality-advancers include:

- A focus on people (i.e., the internal customer)
- Superior products and services
- The profitability of a company
- Quality is job one
- Strong customer focus
- Participative Management
- Employee involvement and empowerment
- Teamwork as a way of life
- Continuous improvement and innovation
- Do everything in a superior manner
- Leadership by example
- Social integrity and respect
- Safety first
- Partnerships
- Do the right thing

- Recruit and train the best
- Communicate openly and honestly

Missions, Credos, and Visions

Examples of mission statements, visions, and credos from quality-advancers are presented here. Importantly, the word "customer" appears in each one.

> The mission of the [company] is to engineer, produce, and market the worlds finest [products] known for uncompromised levels of distinctiveness, comfort, convenience, and refined performance. Through its people who are their strength, [company] will continue to improve the quality of its products and services to meet or exceed customer expectations and succeed as a profitable business (Vice President and Product Manager, Consumer Products Company).

> [Company] is a quality company. Quality is the basic principle for [company]. 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 [company] employee (Director of Corporate Quality, Industrial Products Company).

> We believe our first responsibility is to the doctors, nurses, and patients, to mothers and all others who use our products and services. In meeting their needs, everything we do must be of high quality. We must constantly strive to reduce our costs in order to maintain reasonable prices. Customers' orders must be serviced promptly and accurately. Our suppliers and distributors must have an opportunity to make a fair profit (Director of Quality, Consumer Products Company).

Joint Versus Individual Effort

Several executives of quality-advancers indicated that the writing of the total quality value system is a joint effort, whereas, it used to be an individual effort.

As two executives noted:

> We wrote out mission with the employees of the company. It went through a series of iteration (Vice President and Product Manager, Industrial Products Company).

> The former policy was written by one or two people, written by the vice president and signed by the chairman ... With the new statement, everyone understands and everyone agrees on (Vice President of Engineering, Consumer Products Company).

Big Q Versus Small Q

Without exception, the mission statements of quality-advancers embrace Big Q. In contrast, the mission statements of quality-traditionalists focus on Small Q. According to the vice president of engineering in a consumer products company starting the quality process:

> The old policy has the word quality but it was not all encompassing. It focused on the quality of the product, not the process ...

In sharp contrast to the traditional approach, the senior vice president of a quality service company described:

> People look at quality from the total perspective of how they do business. And our quality credo and values are all tied into one. It is called the way "We do business"... Quality embraces ethics, integrity, and so forth. It is the way people do business.

CULTURE

The total quality transformation has both positive and negative effects on an organization. Most of the benefits that arise from a cultural change are prevalent

in quality-advancers. Though the negative effects are mostly found in quality-starters, in some cases they arise in quality-advancers as well.

Positive Effects

The benefits of a total quality transformation take time to surface. For this reason, the benefits are mostly prevalent in quality-advancers.

Internal Customers. The executives of quality-advancers repeatedly commented on the powerful impact of the new quality culture on the work force. Benefits include: job ownership, job security, job satisfaction, higher involvement, higher motivation, greater enthusiasm, higher morale, better communication, lower absenteeism, lower accident rate, improved productivity and effectiveness. These have a demonstrable impact on the bottom line. The following statements describe these benefits:

> We have people come in all the time and they don't know our organization and they say all the time there is something here, chemistry, something unique: a sense of pride, joy, good will and we don't sense that in many place; something unusual. That chemistry that was created to nurture quality. In my perspective, it is most rewarding, most fulfilling thing that ever happened to us. After you get into quality, you begin to live it personally, you become a better person as you go through the process, and you wonder why you never did this a long time before. It is so normal to operate a company in this way (Executive Chief Officer, Distribution Company).

> [Impact] is powerful. To see people grow both professionally, and personally, to see them concerned, steakholders if you will. It is magnificant, that transformation is unbelievable (Executive Chief Officer, Distribution Company).

[A total quality culture] motivates the work force. It means a lot to get everybody to understand where we're going and how we're going to get there. To feel part of a team, to belong, is a basic need. This is a way of rallying people around. Quality is good, so to be part of a quality team, or quality company will give people a certain amount of pride (Vice President of Marketing, Distribution Company).

The culture of American companies in the past has been one where managers managed and everyone in the company did what they were told. The quality culture that companies are trying to change to are where managers lead and the employees feel empowered and have the knowledge and tools to feel empowered. Meaning they have a sense of ownership and security in the company they are employed (Corporate Director of Quality, Service Company).

The new culture is comfortable, more challenging, more interesting, people enjoy their job more, productivity is higher, absenteeism is lower, employee effectiveness is greater (Director of Quality, Service Company).

Customer Satisfaction and Business Performance. A total quality culture has a demonstrable impact on customer satisfaction and the bottom line. It raises customer satisfaction, lowers costs, improves sales, increases market share, and improves profitability. The following quotations summarize these effects.

If you focus on the customer, you are going to be better in the marketplace; it shows in the financial results (Corporate Director of Quality, Industrial Products Company).

Profitability is up, return on equity goes up, raises productivity, improved market share. In the long term it improves everything, increases customer satisfaction (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

> If it's done right, it makes more profit for the company because everyone is dedicated to the customer and reduced expenses, increases revenue, so the impact is on the bottom line: share holder value, market share. Those those are the benefits of a corporate quality culture (Senior Vice President, Service Company).

> I guess the final impact is greater customer satisfaction, employees more proud and happy to work in the company, improved sales, profitability, market share (Vice President Merchandising, Planning and Control, Distribution Company).

> [Impact is] increase in customer satisfaction, increase in worker morale, increase in market share, reduction in cost due to prevention, etc. Some companies that have been in it for a while claim they have a saving of $1.2 million due to quality (Corporate Director of Quality, Industrial Products Company).

Survival. A total quality culture affects the survival of an organization over the long run. The following quotations are representative of this theme.

> First of all the impact is one that the company gets to survive. The average company if attacked by companies that are enlightened and worked the quality process, it will wither and die. It can't compete in customer satisfaction and it can't compete in cost and therefore it find itself to be constantly in a losing position because the enlightened competitor will set the market price. The average company will dry up and wither away (Corporate Vice President and Director of Quality, Industrial Products Company).

Interestingly, the importance of survival is well recognized by executives of quality-starters, or companies not challenged by competitors. As one executive noted:

> Survival, our sense of urgency around this. We don't have a world class competitor [that is producing our [product]. Our view though is that if we don't behave as though we are in a world economy, we at any moment

could have a world competitor at our heals. If we don't behave as though there is one out there, and one does come, we would try to spool the rate of change over months rather than years, which almost cannot be done. So you're sitting here loosing market share with both hands, because you're trying to move this massive dinosaur. So we want to be proactive about that, assume we are in a world village of competition and get this cultural change happen. So we are ensuring our survival (Vice President of Quality, Service Company).

Negative Effects

The total quality transformation is not easy at first. The work force may feel frustrated, frightened, threatened, traumatized, uncertain, confused, and unclear. Total quality efforts may be difficult to sustain, given that it may take years till the benefits are apparent. Moreover, it is possible that the work force fails to understand the consequence of quality efforts. The following quotations are representative of these ideas that surfaced in the interviews.

I think it is very traumatic. I think it makes people insecure. Total quality management does create complaints. It is a traumatic change. It creates a lot of trouble. On any given day, there will be some people who are adverse to sunshine, who really feel ignored, and feel that their entire career feels threatened. And at the same time that distribution of people who feel threatened can't understand why they can't do their job as stated. They feel very threatened (Director of Quality Services, Service Company).

Anytime you have this cultural change, you have to change the way you function and that's not an easy thing to accomplish. People have to learn new skills, they feel threatened by change, it may require change in staffing perhaps if people did not accept change. So there could be a significant impact (Vice President of Quality, Industrial Products Company).

> Changing culture involves change and change is threatening to people. If you're comfortable doing your job and you're told you have to do it differently, it's a threat to your security (Director of Quality, Service Company).

> A lot of the initial impacts are not all very good. The immediate impact is confusion, misunderstanding, cynicism, and disruption, discomfort and distress... (Corporate Director of Quality, Industrial Products Company).

> A lot of frustration, it is hard. You're changing in most companies a pattern of behavior that has been in work for years. It's a crisis zone. People are comfortable with their old behaviors (Vice President of Quality, Industrial Products Company).

> You create uncertainty because you change basic principles and beliefs in the organization. You create some fear because people in many cases do not understand what the final effect will be (Corporate Director of Quality, Industrial Products Company).

Challenges

Without exception, the executives interviewed viewed the total quality transformation as challenging. Moving towards total quality requires dramatic changes within the organization. It also requires patience and persistence. As one executive of a quality-starter noted:

> David Kearns [chairman executive officer of Xerox] said it to me the best, he said John this is an evolution, not a revolution and you better understand this from the start (Vice President of Continuous Quality Improvement, Service Company).

Quality-starters face many challenges. Some of these challenges are discussed here.

Ridding the Old Paradigm. Quality-starters are

challenged by the old paradigm. The problem is overcoming traditional behavior patterns, approaches, and management styles, which prove to be ineffective today. The total quality transformation contradicts traditional management. For this reason, the move towards total quality can be especially difficult for management. The following quotations are representative of this theme.

> One of the big problems is overcoming the old paradigms they've always had of what the way things are supposed to be. If you take a large company, if you take middle management, they are afraid in many cases that if they buy into this or subscribing to this, and it doesn't really work out right, they are really jeopardizing their jobs. So there is a real reluctance on the part of management, in particular, not so much the hourly employees, to change the way they think about things, to actively try to get the buy in of employees and get them involved. We had to overcome that at [company]. We had a lot of old dogs that we had to teach tricks. We went very much from an autocratic management system where we would manage by peers so to speak. We would expect employees to do what we want them to do or they understood we'd try our best to fire them. And that didn't work out very well at all. We had to become more participative. And that's very difficult for middle management and front line supervisors to change that kind of management philosophy and that's where a lot of companies really struggle... Most companies are still very autocratic. You can probably to some degree enjoy some success if the chief executive officer is autocratic and is very much behind this event. He could make them do it for their own good so to speak. And if you can sustain that you can get the buy in at some point. At [company], we tried a lot of positive reinforcement kind of methods with the supervision to get down to overcome the old paradigm so to speak and we had a lot of difficulty with that. And, finally we threatened to remove them from their job if they did not, starting to adhere to the participative kind of philosophy, making it part of their job, and empowering (Corporate Director of Quality Services, Industrial Products Company).

> You're going to have a lot more people besides the people on the top running the business, a sense of

ownership. We know we will meet resistance to that. The resistance will reside primarily within management. Why? Because the cultural change contradicts what most of us have been taught as managers for the last ten to twenty five years of managing. Managers will say I've worked my butt for all these years, why change, why distribute power. Managers are responsible for the upside down position that most American companies are in, in terms of being world competitive. Within management the resistance to change is going to be more in the middle rank than in the top or bottom ranks of management. The top is energized, they get off on this, they go to school and get their commitment lined up, and the lower down management gets off on this too because they realize it needed to be done all along. People in the middle are most threatened, because more of the change, more of the filtering and the cultural morays over the years are there. The middle are most confused and disfranchised by all of it (Vice President of Quality, Service Company).

[Changing culture] is a difficult process. For the last one year, I have moments of feeling great, moments of feeling terrible. It is very difficult, even at this point in time as I speak to you. I don't think we have a total buy in from top management because it is very difficult for them to start not thinking about this hill and this minute versus the long term of what we're doing today. We are still in a fire fighting mode. That's the best way to describe that and we have to change it and that's the part we are still struggling with (Director of Customer Satisfaction, Industrial Products Company).

Not everyone is happy about change. There are people that are still thinking in the traditional way, they didn't buy into it yet, but time will take care of that (Vice President of Engineering, Consumer Products Company).

A lot of pain.. It forces you to look in the mirror and say the way you've been managing this place is all wrong. That creates a lot of pain. There are people, if their business is successful, say I can't get my people to understand the need for change, because we don't have enough of a crisis on our hand. And we had this big dramatic change and we chose total quality to lead that. So the pain comes from recognizing that you're in bad shape and you really need to make these changes because you've been managing this thing wrong for a long period time (Director of Corporate Quality, Industrial Products Company).

"O.K. Wait and See" Attitude. Commonly, in quality-starters, many employees may have an "O.K. Wait and See" attitude. They await to see actions. The following quotations are representative of these ideas:

> People hear what you say, they have an 'O.K., wait and see' attitude, want to see actions. It's substantiated through the leadership of a company, through the decisions a company takes. It falls back to the old adage 'walk what you talk.' People will give you the opportunity if its reinforced by positive actions that are directed by what you say then they will be very responsive (Director of Quality, Consumer Products Company).

Changing Cultures. As the interviews progressed, it became increasingly clear that changing cultures is difficult because it requires that companies first dismember the old culture, and then replace it with a new one. As the director of total quality management in an industrial products company described:

> If you want to change the culture that's a difficult process. To change culture, you have to consciously do two things: create a new one; and consciously dismember the old one.

Moving towards total quality becomes even more difficult when a corporate culture has been in existance for many years. The following quotations are representative of this idea.

> When you have a certain way an organization has been run for many many years historically and then you try to change that culture you have to be patient. I think patience is a virtue as the old saying goes (Vice President Continuous Improvement, Service Company).

> Let me tell you where it was a couple of years ago. A few years ago it was very high service oriented but it was service oriented as we defined it. There were huge policies sent out... I would not say that our culture now is homogeneous. Primarily because it was homogeneous for the last seventy five years. Maybe because there is a lot of nonbelief that this is something we really mean and stick to it... let's see if this will happen or go back to the old way... (Vice President of quality, Service Company).

Moving towards total quality is difficult for some organizations than others. Instilling total quality is easier for organizations that have always been customer-oriented, whereas it is more difficult for those that have been traditionally cost-driven and bureaucratic. As one senior administrator of a service company noted:

> We have a very strong culture that has come down to us for more than 200 years. To try turn this around in an organization is a monumental challenge, but one that we feel is necessary. We have placed the highest value on cost control in the past. The focus on quality has been secondary. Essentially, you have to say that quality is the most important thing, and cost will follow. The culture is to reinforce the first reaction of every person. In our organization the first reaction is to cut cost.

Convincing "quality is not a fad." In quality-starters, corporate programs come and go. Not surprisingly, employees tend to treat quality as either a fad, or as program of the month. The following quotations are representative of this theme.

> A lot of cynicism. People don't necessarily believe in it - they don't think management is serious. I experienced this at [another] Company. There is a lot of skepticism in the work force when you begin talking about cultural change... People's experience is not

consistent... Companies try a lot of programs that come and go over the years... and as soon as they are bored with it they try something else. The challenge across the country right now is to make quality really stick. The only way you can do that is if management persists and stays with it; its a long haul (Corporate Manager, Industrial Products Company).

It's certainly challenging. It's not easy by any means. It takes a lot of change, learning, and takes time. Change can be difficult, it can be deathreaching. You run the risk that if you don't stick to it, and not be willing to grow with it, and support it from the top, it can be counterproductive (Vice President of Marketing, Distribution Company).

You got middle management thinking it's a fad. We live through several of these fads: zero defects; quality circles. They are all the same. These too shall pass. You have people who don't trust you. You try to pull these things on them (Corporate Director of Quality Operations, Industrial Products Company).

Celebrations

Celebrations are common in companies moving towards total quality. The following quotations are illustrative of this theme that emerged in the interviews.

We had a company unveiling and made a big deal of our mission. We brought all of our front line supervisors all the way up. We brought 600 employees together, explained the mission statement. We enrolled each of these employees. We have a big thing on the wall, where everybody signed their name, basically buying off to it (Vice President of Marketing, Distribution Company).

We're just starting, but we have a great deal of successes. We have to learn how to celebrate, share our successes... We celebrate by getting employees together in an informal environment and discussing successes. It could be a dinner, a buffet lunch, going out with the employee, giving a plack, getting husbands and wives together (Vice President of Continuous Quality Improvement, Service Company).

Duration and Company Size

The size of a corporation affects the duration of the cultural change. The larger the organization, the longer it takes. As the director of quality a quality-advancer industrial products company put it:

> It takes a long time. Small companies have the advantage that they could change their management system very quickly; for them two or three years. For larger companies, it takes five or more years, depending on the size of the company. In the case of [company] it took five plus years in spite of having the basic belief which really kept our eyes on the customer.

PROMOTING QUALITY

Quality-advancers, and quality-starters, both promote quality. This difference between the two groups can be described through the quality life cycle concept.

Quality Life Cycle (QLC) Stage

In Corning quality is characterized by three distinct stages. These include: the start-up stage, the break-out stage, and the world-class quality stage. Companies progress through these stages over time. Companies in the start-up stage focus inward, on the internal customer. During this stage, the company implements awareness training, discussion groups, and employee surveys.

Quality can be promoted internally through an array of activities. These include: written and oral communication: in-house publications, newsletters, newspapers, letters, closed circuit networks, videos, automated

systems; skill training: group problem-solving, team building, and decision making; proposals, annual reports, business plans; reward and recognition; top management teams; in-house conferences; celebrations and so forth. As the vice president of corporate quality in a quality-starter consumer products company described:

> Right now because we're beginning. We're concerned with the basic foundation. The primary focus for promoting quality has been on the chief executive officer and the management team and reinforcement in speaches and so on and positive feedback in the areas that we have started...

In contrast, companies in the world class quality stage focus outward, on the external customer. The goal here is customer satisfaction, at the least. During this stage, companies want customers to enjoy doing business with them. In this stage, quality is promoted both internally and externally.

Companies can promote quality in several ways. First, quality is promoted through written and oral communications: including, company publications, videos, interviews, business press, forums, conferences, presentations, lectures, seminars, education programs, public speaking, advertising, and so forth. Second, quality is promoted through active involvement of employees in various activities with external groups: including, national, state, community, trade, university, membership organizations, business, professional, education, health care, and government organizations.

The following quotations are representative of companies promoting quality in the world-class quality stage:

> The chairman speaks regularly to the employees... and he talks about quality 30% of the time. And the company publications called [company paper] today and in other company publications the subject of quality always has its piece. National magazines, like [magazine]. Quality articles dealt with things that I said. That is really sinking back to the employees. We have quality days. Every department has one quality day a year, where everybody dresses up in casual clothes and we have team building exercises, recognition exercises; we also have a dress down day, an informal day. Two years ago we had a first quality day. People communicated to one another. Every department has a newsletter, and an awards newsletter. But we decided to get together and celebrate our culture, what a great group of human beings we are, and have fun. So we had Stew Leonard here, an impersonator for Ronald Reagan, and on that day everyone came to work dress down. Everyone came casual. All of us came to work in casual clothes and had a great time. It got us to thinking, what we learned though this is the emphasis on uniform and appearance, and it was also shocking how we related differently when we dressed down. People were more genuine, more pretentious, more open, more casual, more relaxed, less stressed. People realized that some of these big shots, the bosses of these companies, are just human beings, needed to be treated with dignity like human beings, but certainly no more than that, subject to good judgement, to preservation, so we decided as an experiment that every Friday in the summer we'd have a dress down day. Now it is a permanent part of our culture... Every Friday we wear casual clothes and it's a statement to each other on our common humanities, and it an effective communication. The chief executive officer decided its a great idea (Corporate Director of Quality, Industrial Products Company).

> Quality is not something you push to the side. In 1975 if you asked our chairman, what percent of his time does he spend on quality, he probably would of said 10-20%; if you would of asked him in 1983 to 1984 he would of said 40%; if you ask him now he wouldn't be able to answer your question because everything I do is focused on quality (Vice President of Quality, Industrial Products Company).

There a lot of ways. Definitely one of the most powerful in the last couple of years is the Malcolm Baldrige National Quality Award in the business press. We did a lot of interviews, speaches, still in the business community (Director of Corporate Quality, Industrial Products Company).

STRATEGIC PLANS

Strategic quality plans are found in quality-advancers. This comes as no surprise, given that strategic quality plans are customer-driven. As companies move towards total quality, strategic quality plans become more prevalent. As the vice president of continuous quality improvement of a service company just starting the quality process put it:

> We started with the officers. You have to go through the awareness effort to make sure everybody understands what total quality is. Once you've done that, you can sit down a group of top fifty people together and put together the strategic quality plan.

A SHIFT IN FOCUS

The focus of quality in strategic quality planning has changed over the years. The executives indicated that the traditional planning process of many organizations failed to focus on quality. For example, the executives indicated that focus in the past was on markets, investments, technology, and so forth. The following quotations are representative of this idea.

> In the past, we never treated quality, we always thought we were good. In fact our plans were never more than a year long (Executive Chief Officer, Distribution Company).

> In the past we virtually treated quality as a non-item. Before it was just assumed that it was something inspected, like putting oil in the machine. It was not a special thrust. Now we understand that it must be part of the annual plan because it's not a matter of maintaining quality but improving it (Corporate Manager, Industrial Products Company).

> Historically we looked at strategic plans as what markets we are in, the kind of investments we make, what is our technology ... But now we also look at quality as part of our strategic plan or competitive advantage and we say how important is quality. If we are the best in quality in our market what does that mean in terms of our market share and in terms of return on investment and from there we set measurable goals. So if you physically look at our plans you see quality built in (Corporate Director of Quality, Industrial Products Company).

Big Q Versus Small Q

In quality-advancers, the strategic planning process approach embraces Big Q. Traditionally, strategic plans embraced the manufacturing-based definition of Small Q. These plans were short-term oriented, and production driven. The following quotations are illustrative of these ideas.

> We have not yet developed strategic quality plans. Till now, quality was treated as a quality assurance function (Vice President of Human Resources, Consumer Products Company).

> Quality has not been addressed in the past. Before 1986, the question of quality was in the context of quality control or quality assurance system. The idea, or thought, of using a quality approach to the way you do everything was not a focus. The human cry for years was on increasing productivity. But real productivity follows with quality improvement (Senior Administrator, Service Company).

> In the past, strategic quality plans were mostly prepared pretty much like a traditional business plan, where we established financial objectives for the year and this objective was trickled down to management where everyone would put into their own objectives and this led to the first year over three year plan. We developed a strategy for three years. Each department would establish objectives for the first year out of a three year plan. Quality was part of the plan, but again it was product oriented not process oriented. Now we are not only measuring product quality, but now we are measuring quality of every activity in the company (Vice President of Engineering, Consumer Products Company).

STRATEGIC QUALITY PLANNING PROCESS

In quality-advancers, the strategic quality planning process begins with identifying key requirements of customers, or customer priority areas. Customer satisfaction is key. Strategies are customer-driven. Companies have short-term (1-2 years) and long term plans (5 years or more), with indicators and details of implementation. These plans are reviewed, revised, and updated annually. They focus on continuous improvement and innovation. Such plans are woven into the business plans. The following quotations are illustrative of these points.

> First of all [strategic quality plans] are a subset of our goals. Every organization has a quality plan that is reviewed and updated every year, it is part of our long range planning which is a five year document put together every year and quality strategic plan is part of that (Corporate Vice President and Director of Quality, Industrial Products Company).

> As a tool of where we are going to be in the future: both in products we represent, markets we are going after, as well as systems integration in our company; especially, we try to project what we want our company to be and where we want it to go (Executive Chief Officer, Distribution Company).

Well it got to begin and end with the customer. Must have it's focus on meeting long term customer requirements. Means you have to have good knowledge of what technology is going to be available to your customer. It begins with the customer, identifying requirements, and devoting strategies to meeting those requirements. Those strategies end up with you providing products and services to the customer (Vice President of Quality, Industrial Products Company).

I envision it with a vision created by the chairman which is unchanging, unreachable, backed up with something you can test your achievements. Having a ten, five, and one year horizon where you prioritize what you want to do in that period of time. You have to use Baldrige assessment, or some criteria. Then that has to aligned, the business strategic plan, has to be tested against that. There has to be a marriage bet the quality strategic plan and the business strategic plan (Corporate Director of Quality, Industrial Products Company).

I envision strategic quality plans as two things. The one is the overall quality process itself and the other is business results and start with customer satisfaction measurement working itself back. As you do this, what we refer to is the diagnosis of where you are today, whether it is in the quality strategy plan, or the improvement of quality in the business results, you decide and prioritize on three or four key objectives. This gets into the term policy function deployment and I don't like the term policy. Having done this diagnosis we select these four critical most important things that need to be fixed during this next plan and then we drive down through that. And there is a way that the president puts that out and each person down the line figures out what he needs to do to meet those objectives (Director of Corporate Services, Industrial Products Company).

Centered Around Award Categories

The business plans of quality-advancers often center around the Malcolm Baldrige National Quality Award categories. As the executive chief officer of a quality-advancer distribution company described:

> We do a lot of benchmarking. We benchmark a lot of companies by function. Our business plan is written around the seven categories of Baldrige. And it is somewhat initiative oriented. These are things we want to do ...

Participation

The strategic quality planning process of quality-advancers encourages employee participation and input. As the executive chief officer in a quality-advancer distribution company described:

> We have a team that does [strategic quality plans] with a lot of employee input. The plan is available to every employee. Every employee can see it ...

Far-Reaching Targets

Few executives of quality-advancers indicated that their plans consist of far-reaching targets, which are driven by customer expectations. As the director of quality in an industrial products company noted:

> We look to see what our customers expect in the future, and from a defect point of view our targets as ten times better... Essentially you extrapolate customer requirements because a lot of times customers cannot define those requirements because they don't know what technology will be ,,,

One Big Plan

Many executives of quality-advancers viewed strategic quality plans and business plans as inseperable. In other words, the strategic quality plan is the business plan. The following quotations are representative of

this theme that surfaced in the interviews.

> We don't call them strategic quality plans, we call them strategic plans. If you believe in the concept that quality is a philosophy and underlying primary focus than any of those plans be better predicated on quality being a primary issue (Corporate Director of Quality Operations, Industrial Products Company).

> We have a one, two, and five year business plan that is revised every year. We do something a lot of firms don't do. We don't seperate our quality initiatives from our business initiatives. The quality plan is part of the strategic plan. The reason is that the two issues to go hand in hand. It's crazy to seperate something that sounds so natural; the two actually becomes one. If you engage quality in you're business you're going to be better. It's part of the same plan (Executive Chief Officer, Distribution Company).

> I'd like to get rid of the word quality, if possible. The only way we'll make it at [company] is by getting rid of the word quality; it just has to be the way you get things done. You don't do it unless it's good. For us understanding where the potential customers are, figuring out what their needs are, and building their plan based on customer driven approach as well as looking at our vision is the direction we are headed (Manager of Quality, Industrial Products Company).

> We refer to our business plan as our quality plan because it is the basis of everything we do. It is ingrained throughout the organization (Vice President and Product Manager, Consumer Products Company).

> It's a tool. Take the word quality out. It's strategic planning. The notion that we have to research a strategic plan here, a financial plan here, and a quality plan over here, that's probably nuts. And if you don't integrate them, it won't match. Take the word out. You look at your environment, your threats, opportunities, where you want to go, how you measure it. What's your plan, what are the break-through issues, and you go after them (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

I do not see strategic quality planning any different from strategic plans. I am trying to tie in with our corporate strategic planning group, because quality should be a component piece, probably the biggest driving component piece of the whole strategic planning process and I want it all to come out under an umbrella as the strategic plan. I want the strategic plan to be quality oriented. Quality flows over to human resources, sales-marketing area, and every area. By isolating quality, you lose it (Vice President of Total Quality Management, Distribution Company).

In the future I don't think there will be a strategic quality plan; it will be part of the planning process. Quality will just be part of the way we do business (Vice President of Quality, Service Company).

I think there is a strategic business plan; I don't think there is strategic quality plan or strategic functional plan. I think it is on the business level, if you do strategic planning and relate that to the actions that are necessary at every function (Vice President of Quality, Industrial Products Company).

A Cascading Process

Strategic quality planning is envisioned as a top-down, cascading process. As two executives noted:

I envision it as an involvement process to develop a strategic deployment plan and general areas of corporate goals. The process, continuous quality improvement, no matter what you do, you allow people at all levels of the corporation to vision and put together their aspirations in terms of what they can do to contribute to quality. You don't try to dictate those. What you have to do is put together general goals at corporate level and then add on to those specific goals with targets at departmental levels and then very specific targets at functional levels. I look at strategic quality planning as a cascading process, a process of generalization at the top and then deployment and alignment of the corporation to the corporate goals and guiding principles (Vice President of Continuous Quality Improvement, Service Company).

> The way I envision strategic quality planning is by policy deployment: an approach to defining company's purpose, long term goals for annual targets, and for deploying those targets down in a cascade fashion, level by level, down to the work force, so everyone knows how his or her job relates to annual business goals and objectives (Corporate Director of Quality, Service Company).

INFORMATION AND ANALYSIS

As the interviews progressed, several executives contrasted the type of information and analysis used in the past, and the kind used today. The executives indicated that the type of data collected was often wrong, misused, irrelevent, and production-driven. The director of total quality management in an industrial products company recalled:

> We tended to measure ourselves before on what we call self-gratifying things. We celebrated plants that set new production records without consideration of whether or not we really delivered things on time to our customers, and so we've had to examine that data. A lot of that data existed, but it wasn't necessary used properly. We had to change our orientation, about what types of data we considered more important.

The vice president of human resource in a consumer products company just starting the quality process noted:

> We do everything from analyzing and tracking consumer complaints to some of your more traditional efficiencies on the line, rework, and those kind of things... classic manufacturing orientation.

The interviews with quality-advancers revealed the following principle types of information and analysis for developing strategic plans: (1) customer satisfaction

data; (2) product and service data; (3) warranty data; (3) process capabilities; (4) competitive and benchmark data; (5) supplier capabilities; and (6) secondary data. The following quotations are illustrative of the types of information and analysis that surfaced in the interviews:

> It starts with customer satisfaction and we do third party surveys, right through the customer base. We do specific surveys with regard to the product if we need to know something. Our problem is how to avoid over-serving customers. The third part survey is mixed accounts, analyze customer priorities, customer perceptions, basic customer satisfaction levels, trends, verbal comments, and this is a main survey. We do sophisticated analysis using statistical techniques with customers, satisfaction survey analysis (Director of Quality, Industrial Products Company).

> Some important information we use is the result of customer satisfaction, customer interrogation systems. That data gives us an understanding of how the top 75% of our revenue base is about us, compared to customers and competitors, compared to the value you are getting for the money, whether we're a partner, how easy it is to do business with us. The second level, each of the business areas, undertakes an in-depth survey of the market: customers and non-customers: how they feel about us, how they feel about suppliers, what factors are most important to them in driving their satisfaction. We use [company] customer satisfaction methods, and an in-depth study of market by market. That's one class of data. Another class of data is statistical process control. A third large area of data comes from employee surveys, employees attitudes about quality, our level of service, other companies where they worked for, fundamental interests... (Corporate Director of Quality, Industrial Products Company).

> Information is collected in four ways. First, information is collected from external customers, through surveys; second, on property focus groups; third, on property reporting system, on complaints in writing or over the phone and then we track; fourth, management selects preferred customer where customers help us manage our [business] (Vice President Human Resources and Quality, Service Company).

QUALITY IMPROVEMENTS

The approach for determining projected improvements in quality has changed from a focus on product comparisons and competition, to a focus on customer requirements. As the vice president of engineering in a consumer products company just starting the quality process described:

> In the past, when we designed a new product, an old product was compared to a new product to determine improvement. Or in the past improvement was also determined through competition. Now we intend to pay a lot more attention to translate customer requirement to the requirement of the process. Before we do that we will get a lot more input from customers. We are going to do more surveys, and make more effort to solicit customer requirements and major customer satisfaction so we have much better understanding of our customers. And we are going to go through a new process that we call quality function deployment where we are going to pay more attention to translating customer requirement to our process ...

QUALITY COMPARISONS

Quality-starters compare products and services against "direct" competitors, whereas quality-advancers compare products and services, processes, and practices against "direct" and "indirect" competitors. "Direct" competitors refers to business against business, within the industry. "Indirect" competitors include world class companies and business functions, regardless of the industry. Often, quality-advancers make comparisons against hundreds of competitors worldwide.

With few exceptions, the executives of quality-advancers identified benchmarking as the approach for quality comparisons. Benchmarking may be one of four

types: internal benchmarking, competitive benchmarking, functional benchmarking, and generic benchmarking.

Internal benchmarking is a comparison of the company's internal operations to competitor comparisons. **Functional benchmarking** is a comparison of function against function across wide sections of different industry types. **Generic benchmarking** focuses on business processes, such as taking an order, creating an invoice, servicing customers, and satisfying customers. The following quotations are illustrative of benchmarking.

> There is a lot of emphasis not only on performance of product compared to our competitors but we also focus on the practices people use to achieve those performance levels. Often times the best practices you will find in companies that are not in your competitors but they are outside your industry. So we studied them in terms of finding out the best way to improve practices and processes to achieve the performance results. But we also know that by watching what our competitors offer in products and services helps drive customers and requirements so in order to understand them you have to know what they are delivering (Director of Corporate Quality, Industrial Products Company).

> An astronomical amount of benchmarking and market research to examine competitors. Diaries that ask people everything they do. So they know when they choose to use [service]. We don't just track competing competitors. We look where we don't get the business, from [competitor], [competitor]. We use a diary system, focus groups... The effective way is not to say how we compare against [service] or [service], but what do you use besides [our company], whether it would be another [service], vehicle, whether it would be another type of company, and multiply that by how many different countries that we do business, and we do competitive benchmarking. So we compare against hundreds of competitors (Senior Vice President, Service Company).

Largely by benchmarking. What we do there, we say what is a world class standard... and that pertains all the way from how does the product perform, what would be a world class standard over there. But we are getting into a process; for example, we can look at a manufacturing process and say what would be a world class standard of a sotter ability of... and we get to a point that we look at this not from a manufacturing process but a business practice as well... We benchmark product, business process, our order entry process, and we benchmark that, and we have benchmarked our total process (Corporate Director of Quality, Industrial Products Company).

You benchmark those things that are important to a particular business. What's my vital few and go after them. We don't benchmark ourselves against competitors necessarily... Benchmark against who in the world, no matter what they do, who does it best... (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

Benchmarking, assessing where we are, where we'd like to be. We compare ourselves against all competitors worldwide... in the automobile arena... also benchmark ourselves in all processes (Corporate Director of Quality, Industrial Products Company).

We compare systems, front-line troops, district office personnel, customer satisfaction survey. Survey has questions in it, that asks what other companies you know provide goods and services [company] does, to you, compares us head to head, with each of the competitors, with each of the customers. We independently conduct third party measurement system and competitive benchmarking (Corporate Director of Quality, Industrial Products Company).

HUMAN RESOURCES

In past years, plant and equipment were viewed as key assets of an organization. Today, such a notion seems rediculous. It is unlikely for plant and equipment to account for the success of an enterprise. In recent years, it is widely believed that the success of an

organization is contingent on the quality of the work force. A company without a quality work force has little chance of world class leadership. Therefore, it becomes critical to invest in the work force. Several executives stressed the importance of education and training, and reward and recognition. The following quotations are representative of these ideas that surfaced in the interviews.

> People are the critical element here. In the old days, we used to think of the equipment as being the critical element. And in more recent times we've come to realize that if people don't subscribe the philosophy we could forget all this. So it's important that you train them well, reward them, recognize them, have a human resource plan that supports the business plan and quality plan of the company (Director of Quality Services, Industrial Products Company).

> Most companies have only two assets, capital equipment and people. It is very unusual for capital equipment to make a company successful. The real ingredient for success is the capability of its people (Corporate Director of Quality, Service Company).

> I guess I'd repeat part of the speech I made the other day. I want you to walk through this place and you're going to see tens of millions of dollars of equipment and each equipment can invent almost anything but if you take the people out of the building it won't invent anything. So it isn't equipment, it isn't money, it isn't the hardware that drives your company, it's the people. And if you don't get the most out of your people, you're not going to survive. Businesses are run by people and total quality management is fundamentally about people. Human resources got to be absolutely critical (Director of Total Quality, Industrial Products Company).

> Tom Peters said that the future of the company's worth is not going to be the plant and equipment on the balance sheet but the summation of the skill of the associates in the organization. And I believe it (Vice President of Quality, Industrial Products Company).

It is clear from the interviews that quality has become a people issue. The reason: the higher the quality of the work force, the greater (1) the product and service quality, (2) the profitability, and (3) the ability of the organization to compete in the marketplace. The following quotations are representative of this theme that surfaced in the interviews.

> I think this is very much a people issue. If you got all the processes in the world, and the best material in the world, but you don't have people with the right attitudes, the right training, and a clear vision, the job is not going to get done (Vice President of Total Quality, Distribution Company).

> The people portion of the enterprise has the most to do if the enterprise successful. It is the major resource of the organization (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

> People are most important asset. You have to have a skilled work force. If you're not one that creates an employee that is happy, trained, you're absolutely dead. If you haven't developed a process where people are capable of making decisions, with some level of empowerment, they can't have the skilled level of doing the job (Corporate Vice President and Director of Quality, Industrial Products Company).

> The implementation of any quality process is contingent upon how well people are utilized, how well they are motivated, how the organization is captured for improvement (Vice President of Quality, Industrial Products Company).

> Human resource utilization is the underpinning of all of this. If you don't have employees that feel committed to the enterprise and feel well treated you won't get the kind of commitment that people devote to the company year after year (Corporate Manager, Industrial Products Company).

I think you must really start with human involvement. In the quality movement, people get so focused on tools and techniques and quality control that they sometimes forget about the role of people. And people are first and foremost (Corporate Manager, Industrial Products Company).

People are your most important resource. You can't have high quality in your products and services if your people are unhappy. It's rightfully a major element in evaluating what you're doing (Vice President of Quality, Consumer Products Company).

A company can't exist without the people, without the products and services they provide that the customer wants to buy and certainly without profits. People, products, and profits are all interrelated. You can't attract good people without have strong products and the company making money in the long run. You can't develop new and strong products without nurturing people and you can't have profits without strong products and services. It doesn't matter how good you are, you always have to get better, recognize that you have to be innovative on an ongoing basis, and you can never be satisfied with the status quo. All this goes against what people traditionally felt, as long as things met specifications, or as long as you kept the percentage of scrapual a certain level was OK. It's not OK (Vice President of Corporate Quality, Consumer Products Company).

People are the reason you are successful and unsuccessful. They are the primary asset in any company. The key to meeting your customer requirements depends on how well your employees are satisfied. You can't have satisfied customers unless you're employees are satisfied (Vice President, Industrial Products Company).

It is so important because quality is not a statistical issue, it is a people issue. And how you utilize your employees and make them a value in running your business is why it is so important (Vice President of Quality, Service Company).

People make the difference. In our case 83% of our expenses go to people and benefits; so it is double important to us. Very labor intensive organization (Senior Administrator, Service Company).

> In the past, you've heard Tom Peters talk say that the only way you are going to achieve world class leadership is through your people. It is people that do the job, that understand what needs to be done, what the issues are, what needs to be resolved. And, unless you create the environment, reward people, and unless you make them an integral part of the way you do business, you are not going to succeed (Director of Quality and Manufacturing Support, Consumer Products Company).

PEOPLE POLICIES

The people policies of organizations are different in quality-starters from quality-advancers.

A Focus on Quality

The people policies of quality-starters and quality-advancers differ in focus.

Quality-Advancers. The people policies of quality-advancers focus heavily on quality. Common policies include: training programs, teams, and reward and recognition.

Training programs focus on: basic training, such as reading and writing, quality awareness, quality skills, statistical techniques, and job-related training. Depending on the company, training may be voluntary, mandatory, or required for only a selective group of managers and supervisors.

Teams can be vuluntary and semi-voluntary, and short term and long term. They range from problem solving teams, employee involvement groups, quality improvement teams, task forces and project teams, self-managing work teams, business area work groups, employee customer

action teams, multifunctional employee teams, etc.

Reward and recognition can be based on either group or individual performance. Reward is monetary, whereas, recognition is non-monetary. Examples of rewards are: conventional payroll systems, performance appraisals, bonuses, merit plans, profit sharing, supplementary compensation, salary increases, benefit programs, and incentive programs. Recognition can come in the form of: token prizes, nameplates, T shirts, pens, thanks, hand shakes, personal letters, announcements in newsletter, notices on bulletin board, public announcements, and recognition luncheons. Companies often employ additional policies. These include: suggestion programs, performance evaluations, open door policies, trust, respect, etc.

Quality-Starters. In quality-starters, few policies focus on quality improvements. The following quotations from executives of quality-starters are representative of this theme.

> Our business has been around for ['number'] years. The [company] is under severe trouble and pressure. For years, there was an attitude of complacency. That's gone. It has been replaced with an understanding that this market is not growing but shrinking, the survivors are going to survive on the basis of increasing market share based on the business that exists; so that's been an awakening for management and employees at large and now there is a sense of urgency to be a survivor. You're going to have to be more than good but excellent in everything you do. That translates into the program I've been sponsering and pushing called 'Better Management and Performance' which is a concurrent process with total quality which stresses the importance of employee communication and feedback, establishes individual goals and objectives and continual coaching; so that individuals succeed and as they

succeed the teams that are part have a better chance of succeeding and the organization at large succeeds. The greatest emphasis that we put in is establishing a nontraditional progressive performance management, a performance assessment program which strives and encourages people to do their best, take more accountability within the scope of their positions. Employee recognition is an important subject for us presently; we do not do enough; we do celebrate in a modest way the successes we have with our total quality teams: a lunch, getting together going out for dinner. We are striving to find more structured reward systems that reward accomplishments in quality (Director of Human Resources, Consumer Products Company).

We're looking at embedding quality as a major element in the reward and recognition system... people are rewarded and recognized for achieving improvement in performance. One of the things we want to do is put quality high on that list. To the extent we can do that, we reinforce quality (Vice President of Corporate Quality, Consumer Products Company).

We have a policy called employee of the month, which has been around for years. The best employees are selected based on what they have done. Now this program is being reexamined. We're looking to make it a better process, more employees will be recognized based on quality. In the past, any kind of reward and recognition was based on contributions. Now what we want to do is reward and recognize based on final contributions to quality. The focus is improvement in quality. We want to refine our system, and give better recognition to employees at every level (Senior Administrator, Industrial Products Company).

We are a company that always had teams, it's just that we've had different agenda for our team. So the team concept isn't new, what it's after is new (Vice President of Quality, Service Company).

Quality Versus Quantity

In quality-advancers, the reward and recognition structure is keyed to quality. In contrast, in quality-traditionalists, the reward and recognition structure is based on quantity. As the senior administrator of an

industrial company described:

> A lot of companies used to be giving rewards based on what a person did, but as a company you realize it is not volume it is the quality of the product you're producing that makes the customer happy.

Quality and policies become inseperable in quality-advancers. The following quotations from quality-advancers are representative of this point.

> Quality is just the way you do business. I have a hard time seperating, quality is just part of the process. We have quality steering teams, work teams, task forces, problem solving teams... (Corporate Director of Quality, Industrial Products Company).

> Everything must be quality. You can't grow a business by 20%, unless it's a 20% quality business you're growing. It's all integrated (Senior Vice President, Service Company).

Big Q Versus Small Q

Policies of quality-advancers embrace Big Q, whereas those of quality-traditionalists focus on Small Q. In quality-traditionalists, for example, education and training stressed traditional quality assurance methods of improving Small Q. A vice president of engineering in a consumer products company described the focus on Small Q, prior to beginning the quality process.

> We have not historically trained people on the right topic or in the right way. In the past, it was upto the individual department to determine what training was required. There was a very small function of quality in the company. Only few people needed to be trained, like specialists, because we dealt with

product quality. It was limited to manufacturing and design.

QUALITY CONTRIBUTIONS AND INVOLVEMENT

The executives of quality-starters expressed difficulty in encouraging contributions to quality. It is clear from the interviews that in quality-starters, mechanisms are not in place (e.g., teamwork, reward and recognition, etc.) to encourage improvements.

In quality-advancers, quality contributions are encouraged through: education and training, team activities, reward and recognition, empowerment, performance evaluations, and suggestion systems. Nevertheless, the the executives of quality advancers expressed difficulty in encouraging contributions from employees who lack direct contact with customers.

Reward and Recognition

In quality-advancers, reward and recognition systems reflect the values and culture of total quality, and are thus closely tied to quality and customer satisfaction indicators. As one executive described:

> The company has profit sharing, gain sharing for all the employees. Quality, customer satisfaction, teamwork, these are all things that employees are evaluated against. Their salaries, increases, and conditions for excelling in these categories (Corporate Director of Quality, Industrial Products Company).

In contrast to this, in quality-traditionalists, reward and recognition center around product quality or reflect

financial indicators. As two executives noted:

> In the case of our old culture, we'd reward people for almost totally financially driven, measurement systems which are following indicators, not leading indicators which may or may not matter to your customer, and a reward and recognition system and promotional system are tied to that, so that we were rewarding different behavior than we want, and when we'd get to the behavior we want, we are going to find some employees who are not capable of changing their style to match that culture; and when that time comes we either have to help employees change and if they can't they don't have a role in the organization and that is very difficult and threatening (Director of Total Quality Management, Industrial Products Company).

> In the past, we didn't have any way in quality to specifically encourage employees. Only when related specifically to product quality was it incorporated in their incentives (Vice President of Engineering, Consumer Products Company).

Importantly, when keyed to quality and customer satisfaction, reward and recognition systems play an important role in encouraging contributions to quality. The following quotations illustrate.

> We have objectives, the achievement of those objectives, people participate in the merit programs which pay for performance, supplementary compensation for management performance, hourly employees benefits through profit sharing; and we also do small things like saying thank you, taking employees out to lunch, having senior management recognized for significant achievements in quality by having them come out to the various locations and so forth, or the giving of the Q1 award, or bringing our suppliers in for recognition for their achievement of Q1... There are a whole array of rewards and recognitions (Director of Quality and Manufacturing Support, Consumer Products Company).

> Recognition includes merit funds, special bonus for contributions made by individuals, spontaneous rewards. We have a lot of things indicated in the form of written recognition: letters, articles written about

them. People like to share in their success of what they have done (Vice President and Product Manager, Consumer Products Company).

When the reward and recognition system reflects the quality values of the corporation, it can have the effect of shaping the desired behavior of the work force and moving the organization towards total quality. The intent is to reward and recognize behaviors that reflect values, and to punish those that do not. The following quotations are representative of these ideas that surfaced in the interviews.

How you make it work is in a sense what your are saying, and there are mechanisms for running the company. How do you reward people, how do you recognize people. For example, you should reward people that embrace quality values. It is important to satisfy customers, then some of the evaluation of a person should be on how well he meets customer requirements. For example, if you're going to pay someone that should be related to performance, and that should be based on customer satisfaction. At [company] we have some good mechanism for doing that. At [company] we have a very formal process for measuring customer satisfaction; we probably got the best survey process in the U.S.; every month we send 50,000 questionnaires to our customers, we get 34% back, and those customers rate us, and we use those ratings, and we've done that for 10 years; so we've got a ten year track of what customers think of us. Last month's rating was 89% satisfied; that is up 40% from 1984 time frame, so we have substantial improvement. That performance is built into the bonus categories of corporate officers and it is also built into the performance measures of chief engineers (Vice President of Quality, Industrial Products Company).

We reward the values we have. For example, we've had employees at [company] that have been repermanded, and in one case fired because he didn't act with integrity. So you have to reward the behavior you want and punish the behavior you don't want (Corporate Director of Quality, Industrial Products Company).

> We take 28,000 people, we talk to them about the guiding principles and actions of quality, take them back into the workplace and put them in the team and make that happen, we have people in charge of reward and recognition saying this is the desired behavior (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

Predilection Towards Recognition. Importantly, recognition is more effective than reward. The following quotations are representative of this point that surfaced in the interviews:

> We have a suggestion system, so there is a mechanism for being rewarded monetarily and I think a person can win upto $1500 per idea ... But monetary ideas are not the only way. People like to be on teams, to have a sense of achievement, the opportunity to participate on a team and the recognition they get. More important than monetary (Corporate Director of Quality, Industrial Products Company).

> Having people know that their thoughts and ideas are received and are being implemented, make them feel part of a team, something simple like saying thank you for a good job or recognition in some way, how small it may be that they are doing a good job and provide that support in itself drives the system (Director of Quality and Manufacturing Support, Consumer Products Company).

> The major ones that are quality related are not monetary rewards. We have a chief executive officer award. And we give twenty of those a year. They are given on site. And that is given for absolutely outstanding world class exemplarary performance; and if you ask me what it is, it is a moving target. Recognition in front of peers. Employee gets a gold plate quality pin. Award can be given to an individual, a group of employees (Corporate Vice President and Director of Quality, Industrial Products Company).

> We do not use any monetary base systems even on suggestions. Monetary awards are very destructive. We have designed a game sharing program tied to key measures of productivity and quality so that people can dile into

> We recognize publicly, in our newsletters, our chief executive officer always sends a letter. A year ago we had a horrible freeze in Houston. We had people come in and work Christmas and New Years. They all received a letter and Omaha steaks for what they did (Executive Chief Officer, Distribution Company).

> We believe recognition is more powerful than reward. Reward tends to be more of a negative thing, if done well tends to be a dissatisfier. But the thing that really turns people on is recognition. However, if your reward system, such as promotions and raises, are not supportive of the quality environment, then you cause a lot of disruption and interference to get that done (Vice President of Quality, Industrial Products Company).

> We give reward for quality, we don't give money for quality. We give a lot of recognition, breakfasts, lunches, and peer recognition (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

Prompt Reward and Recognition. To help ensure effectiveness, reward and recognition must be given promptly. As the corporate director of quality in an industrial products company described:

> We encourage on the spot recognition. Recognition is most effective when it happens immediately after the achievement is accomplished rather than a month after or a year after. So we strongly encourage prompt recognition, a pat on the back...

Empowerment

Paramount to the culture of total quality is the concept of empowerment. Achieving total quality requires a company to move from the traditional view of managers giving directions and making decisions, to managers coaching and employees empowered to make decisions. As

two executives noted:

> Empowerment is providing the clear direction and statement of where you're headed, letting people act independently. You don't give you're employees answers answers. You say: 'What do you recommend, and tell me your thinking how you got to that recommendation.' You play the role of coach. You make sure their thinking is consistent with the corporate direction and it forces managers to be more rational in their approach (Vice President of Total Quality, Distribution Company).

> Empowerment is something management has to manage but in a supportive way; by coaching people. Empowerment is critical to maximize people's ability... (Director of Quality, Industrial Products Company).

Empowerment fosters job independence, ownership and control, independent decision making, within a given domain of authority. Empowerment instills a participative environment built upon trust. The absence of empowerment in quality-traditionalists fosters an environment where employees are afraid to make decisions and discouraged to make contributions. Senior management makes decisions instead. The following quotations are representative.

> [Empowerment is] providing the employee with every opportunity to make decisions, to come forward with bad news as well as good without any fear on his part that he is overstepping (Vice President and Product Manager, Consumer Products Company).

> If employees drive the organization, and they are the ones that contact the customer, and they are the ones you are expecting to use those skills, abilities, and knowledge and initiative to do things for you. You can't have an environment where they are either unequipped or afraid to make those decisions or they will sit around and let management do all the decision making (Director of Total Quality Management, Industrial Products Company).

Empowerment is giving people the authority to make changes, harness their intelligence, their understanding and not to throddle with bureaucratic red tape (Vice President of Corporate Quality, Consumer Products Company).

In the past we didn't empower. Employees felt that management did not care about their input. They would get discouraged, they stopped participating, contributing, making it difficult to make any kind of contributions (Vice President of Engineering, Consumer Products Company).

Most organizations are built in silence and every small group of people has a manager. What typically happens is if one group hands off to another group something that has to be fixed, defects. Usually that group went to the boss, the boss across to the other boss, and when the bosses had time they got together to work on the problem. We now tell our people that you look forward and backward in that process and if there is an issue that somehow consistently your excess passed down to you, or it is not coming there in a timely manner, you're empowered to go over there and work it out and let's figure out what you have to do. And our training is focused on giving people those skill levels to make those kind of decisions. And what we've learned is that management is never typically working real time on the problems you have in added value process in building a product or service to the customer. Therefore the best thing you can do is let the management work on the visionary statements of where the organization is going to go, and what the products are going to be and let the people that are directly doing their job work on the issues to strive for virtual perfection in what they do. It works (Corporate Vice Presidents and Director of Quality, Industrial Products Company).

[Empowerment] is having trust in the individual, respect for the individual, expectations of the individual to do a good job (Corporate Director of Quality, Industrial Products Company).

Allowing people at every level of the organization to make a contribution without being fettered by organizational structural obstacles; allowing people to contribute freely. Quality management is empowerment. It is a circular definition in my mind (Director of Human Resources, Consumer Products Company).

> [Empowerment is] giving the employees the freedom to make decisions and recognizing that the consequence of bad decisions should be a problem solving process so that the next time he has a similar decision he will make a better one. It means not punishing for making bad choices. You have to drive out fear (Director of Total Management, Industrial Products Company).

A Locus of Control. As the interviews progressed, it became increasingly clear that empowering employees requires the boundaries of authority to be clearly defined. Too often, empowerment is interpreted to mean freedom on the job. As two executives described:

> Empowerment is definitely getting all the employees involved, giving them an opportunity to impact things and their job. And once you've agreed on the boundaries of the deploying field then you give them the authority and resources that they can go do what they want within those boundaries. But the boundary aspect is a key feature. Some people interpret empowerment to mean a free flow where everybody goes out and does what they want to. You must have an agreement on the subject matter to be dealt with, the limit that the group can go, and you got to have an agreement on the objective and who's accountable. Once you've agreed on that you turn the people loose and make sure they have the authority, the resources, and leeway to go ahead to do what is right driving toward those objectives as long as you lay the ground rules upfront (Vice President of Total Quality, Distribution Company).

> Allowing people to do the absolute freedom to do the job tht everytime something comes up they don't have to run around to find somebody to make the decision for them. It is empowering people within a certain realm of authority to do the job. For example, we teach that if you have contact with the customer, and the customer has problems, any employee can resolve that issue of the customer up to $1000 without question. All you have to do is report it so you can do trim analysis. If its more than that and they still can't get hold of someone in the higher level of authority, you do what's right in your best judgement for the customer. In the new [company] you would make the judgement. So we would hire people within certain

parameters to do their jobs. It makes people happy to do their jobs. I could tell you that they know more about their job correctly than I ever did (Executive Chief Officer, Distribution Company).

The Threat of Empowerment. Empowerment can be frightening to senior management and employees. As two executives of quality-starters noted:

> Empowerment is frightening. Senior management doesn't understand it because they are rewarded for things they did, which were generally fire fighting efforts, problem solving efforts, things of that nature, now they are up there and empowering people to make decisions. That's scary (Corporate Director of Quality Operations, Industrial Products Company).

> Many employees have been here at the company for a long time, and empowerment is going to be not only a culture shock to management but a culture shock to employees because now we want you to be involved versus we tell you what to do (Senior Administrator, Industrial Products Company).

The Problem with Empowerment. Few executives explicitely indicated that the term "empowerment" is condescending to employees of the organization. As one executive noted:

> One of the reasons why I don't like the term empowerment: it implies that somebody from the top is giving somebody further down the line power and power really exists at the level of the organization where you particularly have customer contact. The most powerful party in the organization should be the lowest party in the organization and I have trouble with what appears to me a very condescending word. The upper people are willing to share their power with somebody at the lower level. Empowerment in my mind really means that people have the ability to meet all the requirements of their job in a quality manner and that obviously means satisfying the customer (Vice President of Quality, Industrial Products Company).

Teamwork, Participation, and Involvement

In quality-advancers, teamwork, participation and involvement are a way of life. In the initial phases of quality improvement efforts, "participation," "teamwork," and "involvement" are key quality values of the organization. Over time, these values are ingrained, and begin to to shape the behavior of the work force.

Additionally, top management plays a critical role in creating a participative environment, the structure, and the training, which encourages involvement, team activities, and quality improvement. Ultimately, a total quality culture emerges. The following quotations are representative of these ideas that surfaced in the interviews.

> Guiding principles say teamwork and involvement are just going to be part of the culture so that sets the framework. It creates an environment where people are going to participate, are going to be involved, and by promoting and encouraging people, and providing satisfaction to people in their jobs and support, it becomes ingrained in the way we do business and it slowly has become institutionalized in the way [company] operates (Director of Quality and Manufacturing Support, Consumer Products Company).

> You have to create an environment that makes every employee a team member. And by doing that, we believe it will encourage participation toward our corporate goals which are our quality goals. We'll provide the needed training and the personal growth and every employee will be able to take advantage of it. Management got to assure that it has the resources and empower their employees to achieve measurable increases in customer satisfaction (Vice President of Continuous Quality Improvement, Service Company).

> Quality is the way we do work. Being involved is how we do business. When you sign up with [company], the new employee orientation, the philosophy of how we're trying to build the company based on a total quality management philosophy, is discussed with you at your initial orientation (Manager of Quality, Industrial Products Company).

> You have to understand how teams work. We're talking about doing the job. I mean we don't come in the morning and say well from 8:00 to 10:00 AM, we'll do quality, and from 10:00 AM to 6:00 PM, we will do the regular stuff. When you come in the morning you work in a team, that is the job, there isn't anything else. We encourage teamwork by training, and designing the structure. There is a lot of work in designing work team, we spend an enormous amount of time in the front end looking at the way workers are laid out and the way it's meant to be accomplished -- in general it's wrong, that's one of the first things that happens is these joint teams, they take a great deal of time. And then you ask how to staff it, and then finally you ask how do I train it, and then how do I run it. But that's a nutshell (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

QUALITY ASSURANCE

There are several differences between start-up and quality-advancers in the quality assurance area.

APPROACHES

The interviews revealed a wide array of approaches for assuring quality in the design and introduction of products and services. They include: consumer research approaches, computer simulations, quality function deployment, tracking, simultaneous engineering, cross-functional teams, traditional quality assurance, and additional sophisticated techniques.

Superior Versus Deficient

Quality-advancers are superior in the quality assurance area, whereas quality-starters are deficient. Quality-advancers use the best practices available, focus on process related measures, and emphasize prevention. Assuring quality of products and services requires the translation of customer needs into product and service standards. The following quotations summarize these ideas that surfaced in the interviews.

> We're trying to move our processes forward in the overall development cycle. Techniques as quality function deployment, much stronger adherence to experimental design techniques, practicing and actively listening what our customers are saying, the process of translating the language of marketers to the language of designers. What are the fundamental causes of problems, root cause, etc. We're moving it up into the cycle itself (Vice President of Quality, Industrial Products Company).

> One thing that we are doing in the design phase is forming teams. Our marketing people, our design people, and our production people are involving customers so that we get customer input early on. And so we can consider all of these factors: distribution, the product, performance as well as the manufacturing process right up front and that would be called simultaneous engineering. The other things we are doing is using the technique of quality function deployment as a methodical way of taking our customers expectations and requirements and turning them into product and service requirements (Corporate Director of Quality, Industrial Products Company).

> The big buzzword is concurrent engineering which is nothing more than taking the serial approach that we used to use, that the system forced upon us, of which evolved into a bunch of specialists, to now bring the specialist back into the same team. Working together that all those things happen (Corporate Director of Quality Operations, Industrial Products Company).

At the simplistic end, listening to customers. At the more sophisticated end, quality function deployment and Taguchi methods, computer engineering. If properly implemented, all reduce errors and any problems that may encounter. So it is a host of things: listening to customers, understanding their needs, preventing errors and turn their needs into product specifications (Corporate Director of Quality, Industrial Products Company).

We have to teach employees some of the advanced thinking tools like Taguchi methods, design and experiment, there is a strong feeling that we have to do more Robust training in just the whole area of design for engineers (Director of Corporate Quality, Industrial Products Company).

Quality-starters use traditional quality assurance approaches, product-related measures, and inspection. These organizations are deficient in the cross-functional area. The following quotations summarize these ideas.

We've been inspecting [product] for the past [number] of years. When you say to me quality now, it has a very different meaning to me than three years ago. We used to do it by inspection, analyze to death, how much resources were devoted to different departments (Senior Administrator, Service Company).

Right now we are using our marketing department to establish requirements from our customers. It is not very effective because it is not structured, not formalized. There are no flow charts showing what's required. People learn through experience. There is poor communication. We are going to change this. We are moving from a corrective, inspective mode to preventive (Vice President of Engineering, Consumer Products Company).

The cross-functional area is not as strong as it should be. Involvement has not been not as strong as need be. Some of the groups have done things in their engineering solo, marketing solo... (Vice President of Total Quality Management, Distribution Company).

> Check and recheck. Checking during the process and after it's completed and once it's on the store shelf (Vice President of Human Resources, Consumer Products Company).

Direct Versus Indirect Communication

In past years, the communication was indirect, whereas, now it is more direct. As one executive noted:

> So, in the old days, to show you how it used to be our salesman would call on the customer purchasing needs, the whole deal would be done there. With the new philosophy, that's not good enough, the technical people talking to their technical people, the people that would actually use the product, and see exactly what they need (Director of Quality Services, Industrial Products Company).

INTRODUCTION TIME

Quality-advancers are better equipped than quality-starters to minimize introduction time of products and services. Ways to minimize introduction time include: fast time to market, investments in latest technology, partnerships with customers, product and development cycle, concurrent engineering, cross functional teams, time compression, cycle time reduction, and so forth.

CONTROLLING PROCESSES

Both quality-starters and quality-advancers employ statistical process control to control processes, allowing for any deviations to be observed immediately. The following quotations are illustrative of this.

> Statistical process control is the fundamental building block. Recognizing that each process in fact has a distribution on how it's performing and getting that process under control, and looking for breakthroughs (Vice President of Quality, Industrial Products Company).

> Statistical methods such as process control. Others where we monitor a process, and ask the operator to ensure things stay under control (Corporate Director of Quality, Industrial Products Company).

> The primary process we use is statistical process control. That is an extention of our design process. With the design process we identify key parameters and put it under statistical process control (Corporate Director of Quality, Industrial Products Company).

In addition, quality-advancers employ sophisticated approaches, such as robust and concurrency of design, to control processes. As one executive described:

> When we have quality review meeting, a part of that meeting is devoted to product introduction. In that meeting, we talk about the robust design, can they be built to the level of robustness and defect free, and we walk through that process. It's been a good contributing factor as far as cycle time is concerned. In the old days, you went through a lot of iterations before you shipped a product to the customer. Now we have concurrency of design where designers, manufacturers, suppliers work concurrently together. We put them in a room together. It develops a paperless society, it's all there (Corporate Vice President and Director of Quality, Industrial Products Company).

Process Versus Results

Quality-advancers focus on process, whereas, quality-traditionalists concentrate on results. The interviews revealed that process can be managed through measurement, while results cannot. The following

quotations are representative of this theme.

> [A total quality culture is an] environment in which the focus is on process and how to improve the process. If it aint broke, don't fix it, but fix the root cause. Don't keep scraping the burnt toast if what you eat is in the toaster. When something does go out of control, and something does happen, don't ask who screwed up, but ask what's wrong (Senior Administrator, Service Company).

> A company that not only values what's done but how it's done. So there is balance of not just a result focus, but a process focus (Vice President of Quality, Service Company).

ASSESSING QUALITY

Quality-advancers use objective approaches and measurement for assessing the quality of products and services, processes, and practices. In quality-starters, quality assessments are subjective in nature.

Ways to assess the quality of products and services in quality comapanies include: (1) market research, such as focus groups, in-depth interviews, surveys, observation, informal interactions with consumers, etc.; (2) quality indicators; (3) third party marketing services; (4) process control measurements; (4) product and service measures; and so forth.

CONTINUOUS IMPROVEMENT

Paramount to the culture of total quality is the drive towards continuous improvement. In quality-advancers, continuous improvement is part of the management of all corporate activities and processes. Quality-starters

pay less attention to continuous improvement. In quality-advancers, continuous improvement is an "active" process, as the following quotation illustrates.

> We have a daily meeting chaired by the plant manager we call QEC (Quality Efficiency Cost) and in that meeting the focus is on continuously improvement. Every morning at 8:30 AM. They meet for an hour and focus on continuous improvement. They will look for any out of control conditions that we've had. On some frequency they will paretorize those kind of things and discuss them. To back that up we have a monthly QEC meeting at the higher level of the company chaired by the chief executive officer, the vice president, the plant manager, and those people serve on that committee monthly. And there we were looking for a kind of macro approach to continuous improvement. We're revealing the quality plan, the monthly data from out of control condition, customer complaints. We try to figure out what happened and how we could improve from there. So it's a pretty active continu-ous improvement kind of process. And to show you where we go from there. The plant manager on a daily basis will send a fax to the home office which is in [city] to the chief executive officer on every out of control condition that we had in twenty four hours and also what kind of continuous improvement activities they are working on. So even the chief executive officer on a daily basis is very much involved in revealing these kind of things. If he's out of town, that doesn't matter because he'll look at all of them when he gets back and everyone knows that and we just try to keep an eye on the system by trying to monitor things everyday (Director of Quality Services, Industrial Products Company).

CUSTOMER SATISFACTION

Achieving high levels of customer satisfaction requires a total quality culture that is customer-driven and strives for quality excellence.

CUSTOMER VERSUS COST-DRIVEN

The drive towards customer satisfaction has not been easy for companies that are not truly customer-

oriented or driven by cost. It is difficult for employees to focus effectively on achieving customer satisfaction unless the customer is paramount to the corporate culture. As the senior administrator in a service company put it: "We believe in servicing the American public, but our value system says that cost is more important."

Commitments to Customers

In companies that are not truly customer-driven, and lag in quality, excellent commitments are difficult to come by. In contrast to this, in some quality-advancers, commitments have become legendary. As the vice president of total quality in a distribution company described:

> Our commitments are legendary. Our basic commitment is that our customers are like ourselves and should be treated as well as we would like to be treated ...

Excellent commitments are mentioned in the business press. As the corporate director of quality in an industrial products company described:

> We recently had an article in Wall Street that said that our customer is number one. And that's a [company] trademark. We have a good reputation. Our company philosophy is to work with our customers to help them meet their objectives ...

CHAPTER 5

DISCUSSION AND CONCLUSIONS

This chapter begins with a discussion of corporate challenges, foreign competition, and the Malcolm Baldrige National Quality Award, which has relevance and interest to both academic scholars and practioners. In the next section, the limitations as well as the contributions and implications of the dissertation are discussed.

DISCUSSION

This section explores corporate challenges, aspects of competition, and Baldrige-related issues. The importance of understanding these issues is critical for addressing challenges and future trends and overcoming significant problems of current practice.

CORPORATE CHALLENGES

Many challenges await U.S. corporations in the 1990s. Some of these challenges are largely controllable by top management and therefore can be altered by them to improve the competitive posture of American corporations. These challenges are summarized here.

Getting Top Management on Board

A challenge that American companies face in the 1990s pertains to top management commitment. The executives interviewed repeatedly emphasized that it is critical for top management to commit to quality now, before it becomes too late. As one executives noted:

> Getting senior management on board with this kind of thing. I think in particular companies that are very successful already, they don't see the wolf at the door so they are not particularly enthusiastic about buying in on this kind of thing. And a good example is the domestic automotive industry back in the 50s and 60s so to speak before the Japanese came in. They took a look at what they were doing compared what others in their industries were doing. As long as they were doing OK there wasn't any concern about trying to improve quality or trying to be more competitive or more productive. A lot of things they didn't see coming. The Japanese with much higher quality and lower cost and this took a big share of the market from them. I think until companies realize that the wolf won't be at the door today it's just a matter of time before someone will figure out how to do it cheaper and better and then it might be too late. So they need to get on board and that drives the senior management commitment. For example, you here the story about Dr. Deming going into companies and then the chief executive officer comes in and introduces Dr. Deming to the group of vice presidents or whatever and he makes his plea and says he has to go to a meeting. And says that everybody should listen to Dr. Deming. And Dr. Deming leaves (Director of Quality Services, Industrial Products Company).

It is clear from the discussion with the executives that many corporations are still oblivious to the quality problem in the U.S. Consider these comments.

> A lot of companies are unaware of [quality] and constantly are going to wither and die. You have companies that rise and fall (Corporate Vice President and Director of Quality, Industrial Products Company).

In this small world we better dam well become leaders or we'll be out of existance or certainly bad shape. So those that got religion and continuous improvement, stay the course with patience and discipline, and are continuously learning and upgrading. But, there are a number of companies that still didn't get the word. There were two articles in New York Times today. One talking about General Motors closing plants; they lost market share, and doubt whether they could get it back over a long period of time. The second article was about Toyota, regarding a meeting in Japan. Suppliers' quality was not good, and cost high. The guy from Toyota quoted defects, which weren't good enough. Some people thought Toyota was exaggerating. But to me that is symptomatic in the U.S. People spend time arguing about whether the numbers are right. The problem is that they don't even know what their numbers are. They should think of what they could do (Director of Corporate Quality, Industrial Products Company).

I do a lot of talking around the country and sometimes I feel real good and sometimes I feel like I'm anxious to go home; then sometimes I run across companies... and I realize they don't understand it... And I guess the world is changing, we are all changing, technology is changing, and I see companies that have no idea that the world is passing them by. They are very comfortable, they don't see anything changing, they think that the way they are going to be today is the way they can always stay. Companies are very complacent in what they do. A lot of companies do not want to commit to leading the cause. If you do not have senior management open and willing to listen and lead, you are doomed, you have no chance, you're like a voice in the dark. I'm praying that in ten years we pull out of this and we can compete. If you go up and compete against Japanese firms you're competing against Japan incorporated. In ten years, if you haven't done it your never going to do it... (Executive Chief Officer, Distribution Company).

Survival

A major challenge is survival. To survive the 1990s, companies must commit to total quality management. The following quotations are representative of these ideas that surfaced in the interviews.

It is very simple. If we don't change the way in which we do our business and everybody has heard about competitive and productivity issues. If you look at the economic issues today, you can't help to get nauseous; you got to get sick to your stomach, because we are losing almost in all categories; and, in order for us to never hope to capture the leading position again we have to commit to total quality management and we're going to have to do things different than we've done before and that means we are going to have to compete in the area of manufacturing products in a global economy, and that means the whole chain, all the way down. If you look at [company], the whole chain of suppliers and distributors must commit to continuous quality improvement. We are going to have to commit to reducing operating costs by elimination of waste and rework (Executive Chief Officer, Distribution Company).

The challenge is survival. If we are not going to be quality-oriented we are not going to be around (Vice President and Product Manager, Consumer Products Company).

I think the quality movement is spreading rapidly, and if companies don't get into it, don't get started on it, they won't survive. There is few of everything left that is not globally nature (Senior Administrator, Service Company).

Rate of Progress

Though U.S. quality has become better, foreign quality continues to improve. Success in global markets can not be assured, given the constant rate of progress of foreign competitors. The executives pointed out that in addition to being commited to quality, companies must accelerate their rate of progress in order to surpass foreign competitors. As several executives noted:

The continuous improvement of our competitors, those from Japan. Their quality for the most part has been better than ours, and they are going to continue to improve. That means our improvement must be faster than their rate of improvement to be able to surpass

their performance. But we are sure that it can be done because Xerox, Motorola, and Milliken have done it. The challenge to get the rate of improvement of American companies faster than foreign companies. The companies that change to a total quality philosophy will survive, those that don't will not. I think that there is a tremendous awareness now that quality is important, that quality does not cost money, but that improved quality means lower cost (Vice President of Engineering, Consumer Products Company).

I think the rate of which we move got to get rampant. I don't think we're making the rate of progress across companies, industries... the constancy of purpose and challenge, and that is interrupted by changes in the organization, changes in leadership. Two fundamental challenges that I see are rate of progress and maintaining that constancy (Vice President of Quality, Industrial Products Company).

I think we are going to be improving but the problem is we have to catch up. Most of our foreign competitors took the long term approach and they became owners and everyday that goes by they keep on raising the treshold higher and higher and we have more and more to cover (Director of Customer Satisfaction, Industrial Products Company).

Power of External Events

Certain issues pertaining to the political and economic environment are difficult to overcome. As the senior vice president and corporate director of quality in an industrial products company described:

There are major external things that I don't know how to overcome. Like Washington and Wall Street. The U.S. Congress is not focused enough on the notion of competitiveness. The whole concept of antitrust gets in the way. It's cheaper tax wise for a foreign firm to come to the U.S. and set up shop than it is for an American firm to expand. You know the reasons why Motorola did not pursue television in the U.S., because our tax traders allowed the Japanese to come in and get tax free breaks for starting new plants if Motorola was denied. Another flaw is quarterly earnings and the force and pressure on any organization in the public

market to constantly update earnings and that drives you toward the short term mentality. Those are two issues for the 1990s that are difficult to overcome.

Trend Towards Value

The trend in the 1990s is towards value. Today, American consumers devote time and effort to get quality at a reasonable price (Sellers July 29, 1991). As one executive vice president of distribution service quality in a service company described:

> Historically companies competed on the basis of price. Now the shift of competition is on value: whether there is a balance between reasonable price and quality...

Ridding of Old Management Practices

Improving quality requires a change in management practices. Traditional approaches often fail in today's environment. As one executive noted:

> History seem to show that most companies get into this on the face of crisis. There are some exceptions to that: Federal Express is one, IBM is another; they never faced a crisis like Ford Motor Company or even Xerox. Xerox had its share taken away by the Japanese and they fought back admirably. Things are going well, you're making money, and it's very difficult to agree that most of your management practices have been around for decades and may not be the best. We're going to have to change (Vice President of Corporate Quality, Consumer Products Company)

Complacency of American Companies

Many American corporations have become complacent. A director of quality and manufacturing support reminisced

the complacency in the automobile industry years ago.

> Consider the domestic automotive industry back in the 50s and 60s, before the Japanese competitors came in. They took a look at what they were doing and compared this to what others in their industries were doing. As long as they were doing alright, there wasn't any concern about trying to improve quality or trying to be more competitive or more productive. So the automotive industry hired probably a lot more people than what they needed, gave in hit bargaining power a lot more quicker than today... a lot of those kind of things they just didn't see coming. The Japanese had higher quality and lower cost and managed to take a big share of the market from them (Director of Quality and Manufacturing Support, Consumer Products Company).

Though American industry has been challenged by foreign competitors, many U.S. corporations continue to be complacent. As two executives noted:

> American corporations have become very secure in how they are doing things. The Japanese have been successful in doing things right the first time, and Americans need to address that issue. We've become sloppy, we must look at our work every day and ask how we can do better (Senior Adiministrator, Industrial Products Company).

> We are still a bit complacent. I don't think we are sufficiently challenged by the Japanese and that is our primary threat (Director of Corporate Quality, Industrial Products Company).

Perceptions of Quality

Perceptions of quality are problematic. American consumers are "not at all confident" that U.S. companies can deliver quality (Garvin 1988). One executive noted:

> Our perception of quality. People now think that only the Japanese can deliver quality (Director of Engineering and Operations, Industrial Products Company).

Changing perceptions of quality is difficult, though possible. It requires continuous improvement and time. Perceptions eventually change, as quality improves. As one executive described:

> I thing the basic challenge is changing perceptions on how the public perceives our company. I think that perception is hard to deal with, it takes time. You need to be the best to change perceptions. I think a lot of companies need to change the overall perceptions people have (Director of Quality and Manufacturing Support, Industrial Products Company).

Ability of American Management

Several executives interviewed expressed doubt in the ability of American management. The interviews suggest that many executives fail to understand key requirements for achieving success in today's marketplace. The following quotations are illustrative of this idea.

> The problem is the ability of management, and many companies don't understand the change and respond to it in a progressive way (Executive Vice President of Distribution Service Quality, Service Company).

> A challenge is American management - get the product out to make a lot of money, who cares if it falls apart (Director of Engineering and Operations, Industrial Products Company).

A Short Term View

Without exception, the executives interviewed were consistent in the view that a quality focus require long term actions. This suggests moving away from the short term view, Wall Street mentality, of making quick profits.

The following quotations are representative of this challenge that surfaced in the interviews.

> Moving away from a short term view and quick profit mentality driven by Wall Street to viewing business for long term view, not financial results (Vice President of Quality, Service Company).

> I think the biggest challenge is to shift from short term to long term focus. Quality is not going to happen in the short term. That's been proven by some of the companies that have been successful in improving the quality process in their business and in the process they've improved their business (Director of Customer Satisfaction, Industrial Products Company).

> Biggest challenge is long term performance versus short term profitability. I think too often our tendency for watching the stock market or quarterly earnings drives us to do things that are not correct in the short term. Somehow we have got to work our way past that. The Japanese take a longer term view, and that has got them a competitive advantage (Corporate Director of Quality, Industrial Products Company).

> A real problem in quality is that American firms are short term oriented, they focus on what is going to happen in the next quarter. Quality takes a long time and you have to stick with it (Director of Engineering and Operations, Industrial Products Company).

Staying the Course

"Staying the course" poses another challenge for American corporations. Quality improvement efforts take time. As several executives noted:

> Quality is going to become an increasingly important element in how companies run a business. I think many companies are giving lip service to quality. Quality has gotten more important and has been elevated in terms of its importance. I think many companies are talking about quality, but not doing as much as they should but again its going to take time (Vice President of Corporate Quality, Consumer Products Company).

> I think the basic challenge is from our perspective is staying the course (Director of Quality and Manufacturing Support, Consumer Products Company).

> I think a big concern is to understand that quality is a never ending process improvement change. One of the biggest problems Americans have is that they are always looking for an end and as soon as they finish something, they go to something else (Director of Operations and Applications, Industrial Products Company).

Improving Response Time

Competing in the 1990s calls for rapid response. As the director of quality and manufacturing support in a consumer products company described:

> In the 1990s what is going to be new is response time to customers... Response time will have to shorten...

Improving Education

Another important challenge is to improve the education of American business schools. There seems to be a great distance between the concerns of business schools and those of American corporations. Many corporations view business education to be largely irrelevant to business practice (Deutschman July 29, 1991). As two executives described:

> The biggest impediment is education. Nothing will change without education, and education in the business schools. Most business schools teach the wrong route: old management practices. Some schools are working to change that (Vice President of Corporate Quality, Consumer Products Company).

> The graduate schools have been notoriously irresponsible. People that are doing research are studying things that are irrelevant. The bottom line is that the academic community doesn't seem to get the action (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

People Management

As few executives indicated, the work force is becoming increasingly heterogenous. This poses another challenge to management. As the director of quality in an industrial products company put it:

> People management... In the U.S. the work force is becoming more heterogeneous, lots of working single parents, inconsistent education level, ethnic groups with different motivations...

CAN AMERICA COMPETE?

The executives expressed mixed views on this issue. These views are summarized here.

A Bullish Outlook

In many interviews, executives reacted favorably toward American businesses' ability to compete with foreign competitors. As two executives commented:

> Well there is no doubt in my mind that we can compete. We have areas to improve but so do all the other countries. It is more one of will power than anything else. The U.S. did dominate the world after World War II economically and as well as militarily so it's getting used to the idea that we are still a great country but we are not necessarily the world superior country. We need to change our attitude: accepting the fact that in some cases other countries are going to be superior to use in given areas (Corporate Director of Quality, Industrial Products Company).

We've got world class companies in the U.S. and they are capable and are competing. We can compete on a worldwide basis (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

A Mixed Outlook

Several executives were ambivalent on the issue. As several executives noted:

I'm sort of ambivalent. A lot of companies are going to get worse till they are finally put out of their misery and some of them, as it is already happening, will get on the bandwagon and be pretty competitive in five years. It's a mixed bag. On a company basis, some better some worse. Hard to tell how much is smoke and how much is real. We'll see a lot of companies fall down to tubes. Some will get better (Corporate Manager, Industrial Products Company).

I think we have some companies that are staying the course and will be world leaders. I think you still have a lot of companies that think they will wait and see and that this will pass as other things have passed and as time goes by you'll have more and more companies go out of business if they can't compete (Director of Quality and Manufacturing Support, Consumer Products Company).

Some good, some not so good. Companies that take customers seriously can compete successfully. Companies driven by internal measurements, such as profit, are less successful. I don't know how the U.S market can survive. In five or ten years, some companies will go ahead, and some companies will disappear, other companies will emerge (Director of Operations and Applications, Industrial Products Company).

A Pessimistic Outlook

Some negative comments arose during the course of the interviews. As one executive described:

> Our ability to compete is not so good, our balance of trade is terrible. And I think we found where we go head to head with companies, generally we're not doing so well. A beautiful case is the U.S. auto industry. General Motors just announced closing four plants. The Japanese Toyota has announced that it's expanding its Kentucky plant. And you look at companies doing well. The banking industry. America banks used to be the entity of the world. I don't think there is a bank that is in the top ten or twenty. The electronic industry has big trouble there. We don't produce VCR's in this country. Consumer products industry has fortunately escaped so far, but I believe every company has got to make quality a major strategic theme if they are going to survive in the long run, its only a matter of time. I see us getting better, but the other side of the coin is that the Japanese aren't standing still (Vice President of Corporate Quality, Consumer Products Company).

Varies By Industry

The ability of American companies to compete varies across industries. The following quotations are representative of this theme.

> Varies by industry. Industries which have been threatened by foreign competition are performing much better than those that are not. Unfortunately in the service industry, most companies have not been threatened yet, but they will be (Vice President of Total Quality, Distribution Company).

> It is a market by market thing. Some industries compete better. With VCRs we don't compete at all. I don't think it is U.S. versus Japan versus Germany. It's a market driven thing. I think we compete just as well as anyone else does in certain markets. We make the best biomedical products in the world; best aircraft ... We absolutely have the ability. I think what's happening is that in a particular market, such as VCR's, quality is no longer an issue, since it so reliable. So the competitiveness will shift to features. Because they all are perceived as having the same attributes (Corporate Director of Quality, industrial products company).

Absolutely have the ability. In some industries, we are very good: entertainment, air equipment, airplanes, and related businesses we're doing very well. In consumer electronics we're doing terrible (Corporate Director of Quality, Service Company).

Depends on Leadership

The ability of American businesses' to effectively compete with foreign competitors is affected by leadership. As the executive vice president of distribution service quality in a service company put it:

Mixed. It depends upon the industry and the leadership. Let's begin with leadership. The focus on customer and competition varies from company to company and depends on the leadership of that company. Now, in some countries, or in some areas, the leadership would not be there unless they had the skills. In the case here in the U.S. because that hasn't been of demand for the past ten years. There are number of people in senior management position who have not understood that or have not had to understand that historically as a result are unable to make the change... Examples are Ford and General Motors. Ford is one that understood the fundamental marketplace imperatives that were changing the automobile industry in the U.S. They recognized the shift and customer buying habits were toward what the customer perceived as higher value. Ford realizing that in the early 80s and began heavy focus on job one process in improving the quality of the products and services they provided the customer. The result of that is improvement in market share. They made more money than General Motors. General Motors under Mr. Smith's leadership did not perceive at best in whatever they did. The result was not very successful for them. Ford moved very quickly, General Motors very slowly, and the result is General Motors profitability is slipping, they are closing plants. Those companies that have had leadership in meeting the needs of customers are going to able to succeed. Companies like Xerox, IBM, Ford ... Those that don't will not survive. In five years, we'll continue to have a shakeout. My prognosis is positive, we'll go through a degeneration of managers and top executives, and, degeneration does not take more than five years. The ones that I'm concerned are the ones in place now, that were selected on a different criteria. Let's say 60%, some already recognize, that's a third, another

third will come to realize, and another third will be replaced. The prognosis is very good and it will take five years to sort out the ones who are not well skilled for today's environment. In effect, in a changing environment, change has to be led and that has to be top management ...

Quality, A Prerequisite

Quality has become the cornerstone of a product. As one executive noted:

> As far as quality is concerned, by the time the 1990s is done, if you're not recognized by the customer in the market you're participating in as providing a quality product, you ain't going to be in business because quality is going to be an entree. That's what is expected, period. And what the public is beginning to do is look at is other criteria (Director of Quality and Manufacturing Support, Consumer Products Company).

A Narrower Gap

The executives forsee the competitive ability of American businesses to be improving. Therefore, it is just a matter of time before the gap between American and foreign businesses becomes narrower. The following quotations are representative of this theme.

> Not very good today but getting better. More companies are seeing the light, but the Nationwide effort is still nowhere where it got to be. After ten years, there are still key suppliers in the automobile industry that don't understand the message yet (Director of Corporate Quality, Industrial Products Company).

> In five years, we will have lost market share in some industries and sustained a competitive position in a few others. But in the long term, I think we will be successful because we are catching this issue of quality to be competitive in the future (Vice President of Human Resources and Quality, Service Company).

> Compared to the Japanese we still have a way to go. We still don't have the quality ethics that is prevalent in Japan. I think in the rest of the world we're pretty close. In five years, we will be catching up, but I guess my prediction is we still won't be caught up because it's a moving target and people are getting better. I think the gap will get narrower. If we won't be in ten year there is going to be another company owning us so we'll be there by default because someone else will be managing us (Director of Operations and Applications, Industrial Products Company).

BALDRIGE-RELATED ISSUES

Taken together, the seven award categories can be viewed as key ingredients of a quality company. As the corporate director of quality of an industrial products company commented:

> There are seven things that the Baldrige Award highlights. These seven encompass the complete picture.

Positive Effects

The effects of the Malcolm Baldrige National Quality award program are profound. The award program (1) promotes awareness and interest in quality; (2) fosters an understanding of the requirements of quality excellence; and (3) facilitates the sharing of information; (4) improves competitiveness; (5) stimulates activity; (6) provides a defacto standard, framework, assessment tool, reference, checklist, and roadmap; and, (7) creates a common language.

Awareness and Interest. Without exception, the executives were consistent in the view that the Malcolm

Baldrige National Quality Award has raised the awareness of quality in the U.S. As several executives noted:

> I think it's positive and increased awareness of quality in this country to a level that I haven't seen in the last twenty five years since I've been in the business environment. I haven't seen people talk about quality as much as in the last three years (Director of Customer Satisfaction, Industrial Products Company).

> Tremendous. There is no other thing that raised the consciousness of the business leadership in this country more than the Malcolm Baldrige National Quality Award. It is phenomenal what it has done to heighten the understanding of what a quality culture is, and how important it is to change to that (Director of Total Quality Management, Industrial Products Company).

> The Baldrige Award is a ralleying point, a lightning rod, to draw attention that quality is important. It's a method of ralleying management ideas that quality is becoming more important (Vice President of Marketing, Distribution Company).

Sharing of Information. The executives indicated that the award encourages sharing of information and best-practices across industries. The following quotations are representative of this idea.

> The biggest part, is that it has become an absolute catalyst to talk about the quality process... There is a great sharing going on among companies in the U.S. We are all going to school on each other... (Corporate Vice President and Director of Quality, Industrial Products Company)

> Provides a network which people can get information, share practices... I think it has had an enormous impact (Corporate Director of Quality, Industrial Products Company).

> Encourages companies to share great ideas with each other. It causes companies to look cross-functionally into other industries (Vice President of Human Resources and Quality, Service Company).

Improves Competitiveness. Importantly, the executives indicated that the award improves competitiveness. As these executives described:

> Regardless of the motive it's good from the competitive standpoint (Director of Engineering and Operations, Industrial Products Company).

> I read that it's going to add one or two percentage points to our gross national product and I would tend to agree with that. It's going to make American businesses more competitive in world markets (Vice President of Total Quality, Distribution Company).

A Standard, Framework, and Assessment Tool. The interviews suggest that the award has become a defacto standard, framework, reference, checklist, roadmap, and an assessment tool. The following quotations are representative of this theme that surfaced in the interviews.

> I think it is becoming a defacto standard for quality in the U.S. I think that companies are using the Baldrige criteria to evaluate themselves. I think companies are using the Baldrige criteria to establish internal award systems. I think we are using the criteria to define quality processes in the U.S. (Vice President of Quality, Industrial Products Company).

> Gave us a standard of quality, giving us a way of measuring quality. Now we can use it as a ralleying flag. In the past quality was subjective, and we were really not able to measure quality, and the ability to measure allows us to use it as a standard (Corporate Director of Quality, Industrial Products Company).

Generally, good. It sets a standard that's high and makes quality a national priority of American business and acts as unifying credo (Vice President of Quality, Service Company).

Overall I find the Malcolm Baldrige National Quality Award to be the most effective and well-thought out group of criteria, recipe, for creating a quality process that I know (Corporate Director of Quality, Industrial Products Company).

A Common Language. As the interviews progressed, it became increasingly clear that the award has created a common language of quality for American corporations. The following quotations are representative of this theme.

For the first time all of American industry have a common understanding of criteria for achieving excellence in quality and with a common set of criteria there is a common language, a well accepted set of criteria, and we can begin to teach these approaches in schools and support R&D in the academic community to help us to do quality better (Corporate Director of Quality, Service Company).

The Malcolm Baldrige National Quality Award is a guide to improve the enterprise. Quality has experienced the presence of certain religions - Deminites, Juran's. The award has a single blueprint. It's getting a lot of exposure. It provided a benchmark, a common metric, vocabulary, put a real shape and profile to the quality conversation in America (Senior Vice President and Corporate Director of Quality, Industrial Products Company).

For the first time we have a national common language. We have a set of tools and techniques, ones most successful for use, set of criteria that you can measure yourself against. A common system that's being promoted across the country (Executive Vice President of Distribution Service Quality, Service Company).

Organizational Effects

Without exception, the executives indicated that the award has a strong impact on the organization. In some companies, for example, executives discussed the benefit of applying. In other companies, executives commented on the advantage of using the criteria for internal assessments. The following quotations describe these benefits.

> The Baldrige Award had an impact on [company]. It gave a lot of information of where we are, where we need to go, nice cross check of where we thought we were compared now when the examination team came in and some of those short falls we have were more visibly identified and included in our future plans to achieve our goals (Director of Quality and Manufacturing Support, Consumer Products Company).

> We use an internal Baldrige approach. Our objective is not to win a Baldrige award but to improve the company business, so it has had an impact because we are using the criteria (Corporate Director of Quality, Industrial Products Company).

> We applied in 1988, the first year it was created. We received a site visit, but the award crystalized for us to look at our work processes and focus on prevention rather than fix it. We were told that noone fixes problems better than we do but we were generating too many problems. We really have to look at the underlying root causes of the problems, fix the processes, so that we can improve the satisfaction of our customers. We will apply again down the line (Vice President of Total Quality, Distribution Company).

> Yes, by highlighting companies that have become world competitive and opening doors for companies like mine and opening doors to these companies, to find out how they made these transitions. Changed our management focus from an internal one to an external one so that we can learn (Vice President of Quality, Service Company).

People are beginning to use the Malcolm Baldrige criteria within our various divisions as a way of assessing their maturity in terms of quality improvement processes. I think they are learning a lot from doing the Malcolm Baldrige assessment (Corporate Manager, Industrial Products Company).

We chose it to intensify our efforts. Rather than create the era of complacency, "Gee we won, we must be pretty good," we all celebrated the winning, but we also said Christ we have a long way to go. The whole purpose of how we used it is to use it as an assessment of how well we were doing and where we had to improve and we have a whole list of 55 action items (Director of Corporate Quality, Industrial Products Company).

The award has had an impact on the firm in terms of awareness, requirements of Baldrige award. It is a good framework of what is required to implement total quality throughout the corporation. Part of the award is to share successes, that has opened up lines of communication. The Baldrige Award is pretty effective, but there is always room for improvement (Vice President of Engineering, Consumer Products Company).

Criteria

With few exceptions, the executives spoke of the award criteria in a positive light. They characterized the award criteria as: powerful, challenging, excellent, thorough, comprehensive, continuously improving, and objective. The following quotations are representative of the executives' views of the criteria.

I think it's a great set of criteria, and it's moving in the right direction. It is broadly comprehensive, and systematic and looks at the organization as a whole, and doesn't just cherry pick a few fifty facets of quality effort. It looks at quality as a pretty complete way. I think it's not as comprehensive as some of the criteria I've seen of the Deming Award in Japan and I see room for improvement of the criteria of the Baldrige Award, but it's moving in the right way (Corporate Manager, Industrial Products Company)

We moved forward with quality until we ran across the Malcolm Baldrige National Quality Award criteria, which gave us an absolute total road map, if you will, because it is so comprehensive. When you apply the criteria to your organization, you're going to find out that you probably don't know as much about your company as you thought you do. And it is a magnificant tool to operationalize the Baldrige approach and see the rewards of it. It is a very normal way of running a company (Chief Executive Officer, Distribution Company).

It's tough. It involves a lot of soul searching. The 1991 criteria is harder. Every year we improve the document, and it becomes more comprehensive (Executive Chief Officer, Distribution Company).

The criteria are excellent. The Malcolm Baldrige National Quality Award guidelines are one of the best analytical and teaching tools with respect to total quality. I'm using it inside [organization] as a means of giving people the awareness of what is total quality management, both as a teaching tool and analytical tool for what you have to do within your organization to move ahead (Senior Administrator, Service Company).

I think the criteria is better every year. The first year it was very rough; it looked like it was developed by a committee. There was a lot of overlap and a fair amount of confusion and redundancy. And the criteria and questions didn't track the weights. This year it was dramatically improved (Corporate Director of Quality, Industrial Products Company).

It's the best that exist in the world today. The reason is it is annually considered, reviewed, updated, improved... If there is a better idea it is incorporated within the year (Executive Vice President of Distribution Service Quality, Service Company).

Concerns. Few executives voiced concerns over the criteria. They indicated that (1) the criteria demand too much, (2) a single set of guidelines is senseless, (3) the language is unclear, and (4) the criteria is not an end all.

Aspects Not Covered. Some aspects of quality are difficult to reveal. As this executive described:

> Again it depends on the particular business. The Malcolm Baldrige National Quality Award is a minimum model. Certain things cannot be laid out in the Baldrige application. Take for example a dental practice: the ability to do billing with third party; having reading facilities. The award is the minimum set of criteria. It's a wonderful place to start... The criteria is laid out based on a manufacturing firm. That is because there is a whole section of quality assurance. The criteria do favor the manufacturing sector. Highly successful service firms don't have a quality assurance function (Corporate Director of Quality, Industrial Products Company).

A second problem with the criteria pertains to the the point weighting. As the corporate director of quality in an industrial products company described:

> The point weighting may not be appropriate for every given company. It is not that the criteria aren't OK, it just reflects our current needs, and the weighting is very much a function of the organization you're trying to lay out the criteria ...

Overall Limitations

The award progam has its limitations. These include: (1) few winners; (2) excludes non profit organizations; (3) application fees and paperwork; (4) threat of good writers; (5) bias toward manufacturing; (6) consistency of award process; and, (7) subject to advertising abuse.

Few Winners. Several executives commented on the number of award recipients. Two awards are given per year

in each of the three categories: manufacturing, service, and small business. At the most, there can be six award recipients. The following quotation by the director of quality services in an industrial products company is representative of this view:

> I think there is a feeling among the large manufacturing companies that we're really splitting hair by naming only two winners at maximum per year. The Deming Prize does not limit the amount of winners in any one year but the criteria are so involved and stringent and you have to have consultants to help you, so that they don't have a lot of applicants in a year's time. And I think a lot of companies really feel they stand a shot at this thing and they do stand a shot at it and then they get into the site visit and they do stand a chance and then they don't win they feel that two is not enough. And maybe we ought to evaluating against the standards and not be limiting ourselves. I don't know if I agree with this or not, we're still picking the two best and it becomes a very special thing even though there is a fine line between third, fourth...

Closed to Non-Profit Organizations. Certain organizations cannot compete for the Malcolm Baldridge National Quality Award. As the director of quality services in an industrial products company put it:

> There is a school of thought that maybe we ought to open [the award] up to universities, non-profit hospitals, and even government and have a special Baldrige Award for them ...

Application Fees and Paperwork. Another limitation pertains to the fees and paperwork involved in the award application process. The following quotations are representative of this limitation.

A company can apply for it if they are willing to spend a lot of money on the application. Its costly. It would be difficult if you were a company that didn't have a lot of money and resources. It would be difficult to win the award unless you are willing to take people off their full time job and spend time on it. Companies hired people to find out what they did wrong. I believe there are small companies out there that are quality oriented and can't spend the money on it. Companies that won it not only had to spend the resources but that became their full time job (Senior Administrator, Industrial Products Company).

You've got to recognize that it's going to take some capital to go through the process. The Malcolm Baldrige National Quality award is very intense, very large scale, and cost a tremendous amount to do that. It could scare some people away from the process (Director of Quality and Productivity, Consumer Products Company).

Effects very positive in intent, and negative in the bureaucracies that are required. I was just reading that IBM Rochester extended 20 man year of work time to complete the 75 page report for the Baldrige application (Vice President Merchandising, Planning and Control, Distribution Company).

Just reading how much time companies spend preparing the application. That scares me, from the standpoint of a small company trying to compete for the Baldrige award (Director of Customer Satisfaction, Industrial Products Company).

People have complained that it takes too much paperwork to get the application done. That is, the amount of work to prepare (Vice President of Engineering, Consumer Products Company).

Threat of Good Writers. Good writers can misrepresent the application. As two executives noted:

Once of the biggest dangers is that it could be victimized by good writers, people who could portray themselves to be something if they aren't. More and more in the future the cite visit which is a validation of the claims is going to be very important. We wrote the Baldrige application and we hired a script writer.

> What he wrote about us was not a misrepresentation. A cite visit would indicate that we had not achieved the maturity in the process in the way it was written. We didn't do that in the [company] application but I could sure write one that would look good. However, if a cite visit is done right, it has to validate claims. If an examiner comes into the cafeteria and sits at a table in the cafeteria, and they ask can you explain the values, the measurement, the truth will come out (Director of Total Quality Management, Industrial Products Company).

> People are getting very good at writing the document; they claim they have the right kind of processes deployed; the cite visit finds you if you are not truthful; I think we are going to see more linkage of results to the processes "Show me by virtue of your achievements that they really exist." But the concepts that they ask you, what do your processes do and the results of what these processes produce (Director of Corporate Quality, Industrial Products Company).

Biased Toward Manufacturing. It has been argued that the award process is biased toward manufacturing. As two executives noted:

> Some companies say service companies can't win and that it would be difficult for small companies to win. I think there would be advantages to both (Corporate Director of Quality, Industrial Products Company).

> When [application] first came out I think it was biased, a little too much towards manufacturing and now I think it reached a better balance (Vice President of Total Quality, Distribution Company).

Consistency of Award Process. Given that both the examiners and application change(s) yearly, there is reason to question the consistency of the award process. The following quotations are representative of this idea that surfaced in the interviews.

The awards are based on examiners who are individual people who may be more or less competent than others so there is always the question of consistency (Vice President of Quality, Industrial Products Company).

It's a big step in the right direction. I think it needs some maturation. I think it needs to look at who they are using as examiners. My concern with the Baldrige Award is the consistency from one examination year to the next because the examiners change. I think we need to cultivate maybe a crop of perhaps professors much like the Deming Award. By using professors we can integrate business and industry more effectively... The problem is that in five years from now the winners are not going to be the same as now. The consistency is not going to be there (Manager of Quality, Industrial Products Company).

Subject to Advertising Abuse. Most executives commented negatively on the promotional aspect of the award. Consider these comments.

One negative is the advertising. I'm getting tired of seeing the Cadillac ads. I think the award will be somewhat cheapened (Director of Engineering and Operations, Industrial Products Company).

Allowing the commercialization of it. Cadillac has done a lot to blast this award, and destroy its credibility. It didn't even wait to the official announcement. General Motors puts all this advertising copy out that makes you think because one of their divisions won somehow General Motors is the new mark on quality, typical Madison Ave hipe that is going to give quality and the whole movement a bad name in the eyes of the consumer (Vice President of Quality, Service Company).

Well it is subject to abuse. Cadillac stressed the boundaries real bad... General Motors saying that they are the premier car manufacturer in the U.S., I'm stretching a little bit ... the guidelines are being rewritten a bit. On the other side, they got a lot of advertising out of it. It is subject to abuse. But that's the American way. You wonder about the credibility of the award (Corporate Director of Quality, Industrial Products Company).

When to Apply

There are two schools of thought on when to apply for the award. These are discussed here.

Applying When Well-Deployed. According to one school of thought, it is most productive for companies to first conduct internal assessements on a regular basis, and to apply once 500 or 600 points are attained. The following quotations are representative of these ideas.

> People should apply when they reach a five hundred point level, not when they think they'll win. The feedback from the Baldrige people was detailed, specific, and valuable and part of the continuous improvement process (Director of Total Quality Management, Industrial Products Company).

> Not until a firm has a score till 600. Its counter productive to apply when you have weak elements in the system (Vice President of Continuous Quality Improvement, Service Company).

> Companies should do an internal assessment based on the criteria, and when the internal assessment achieves 600 points of 1000 points, then you should apply (Corporate Director of Quality, Service Company).

> Well if you're going to apply you should stand a chance of winning the thing. They should of already implemented in all areas, pretty much deployed down the line. If there are a lot of questions they can't answer, or if there's data they just don't have, then they are not ready. They shouldn't apply for the sake of applying. They ought to do it thinking they are good enough. You ought to apply if you're pretty well deployed, 500 or 600 points (Director of Quality Services, Industrial Products Company).

> Apply when you've made serious attempt at tackling every aspect and after doing a self assessment objectively (Vice President of Corporate Quality, Consumer Products Company).

Applying Anytime. The second school of thought views applying to be productive at any point in time, given that the purpose is continuous improvement. Upon submitting an application, companies receive a detailed objective feedback report that can be used for guiding quality improvements. The following quotations are representative of these ideas.

> I think if they are very serious about their efforts to continuously improve. If they are serious about their objectively trying to understand where they are, where they are against the best in class in whatever they are doing. When they have the commitment and energy level that is strong enough to deal with what they have to learn (Vice President of Quality, Industrial Products Company).

> Reason for applying can be several. First, to gain access to the expert feedback that results from the application. You get a feedback report, written by some of the best experts that can be of value to the corporation. Second, to draw a line in standard, and use it as a motivation and timetable to prepare a company for the prize. Third, for advertising, though that's not a legitimate strategy. The odds of winning are so low, so for that purpose it's not a reasonable thing to do. For performance, customers, shareholders, employees, that's a reason (Executive Vice President of Distribution Service Quality, Service Company).

> To go after the award to win it is a big mistake. Winning was 10% of our incentive to apply. It was an excellent benchmarking exercise for us. I think every company should write an application and use it as measure where they are and get an understanding and it's up to them whether or not to apply. But I think every company should look at the criteria as a measure when they evaluate their own quality progress (Vice President of Quality, Industrial Products Company).

> Companies should apply for the award, when ready. Applying doesn't hurt. Applying and losing might be more valuable than applying and winning, more self-assessment and understanding opportunities to improve (Corporate Manager, Industrial Products Company).

> I think people should apply for it if they just want a diagnosis or when ready to win. You should use it as the cheapest form of consulting around. And you should use it as an outside opinion (Manager of Quality, Industrial Products Company).

Benefits in Applying

There are many benefits in applying, even for a company that is unlikely to win. Applying results in (1) a company feedback report; (2) a rise in inertia within the organization; and, (3) a commitment to quality.

Benefits in Winning

There are many benefits in winning the award. Winning the award results in a positive reading of all corporate indicators. The benefits for the winning firm include: recognition and prestige; excellent corporate image; organizational pride; quality improvements; increased employee morale; advertising; information sharing; improved competitive posture; higher consumer confidence; improved financial performance; and, higher levels of customer satisfaction.

LIMITATIONS

This dissertation is limited in both research methodology and scope. First, the number of respondents interviewed for this dissertation falls far short of the number of individuals needed to survey for statistically projectable results.

A second limitation pertains to sampling procedure.

In a survey, respondents are screened and enlisted on a probability basis so that principles of random selection shape the structure of the sample. Also, the biases introduced by respondent self-selection or interviewer convenience are minimized. In this study, respondents were not selected on a random basis because statistical projectability was not a goal. For example, respondents were recruited through quality conferences, forums, seminars, and referrals. The selection and number of respondents were governed by convenience and feasibility.

An additional limitation is related to question structure and sequence. An element of statistical reliability is the assumption that all respondents will be asked every question in exactly the same way time after time. This approach is characteristic of the survey but is not compatiable with qualitative research. Each in-depth interview is unique and the flow and wording of questions are spontaneous and variable. The premise of qualitative research is that questions must vary in response to the character and requirements of each respondent or in-depth interview. In fact, successive rewording of questions to elicit more profound information and richer insights is a requirement of good moderating (Goldman and McDonald 1987).

The data analysis here addresses how people feel and why, rather than how many of them have expressed specific opinions, concerns, or reported using particular quality-practices. Simplification or measurement is not a goal.

Therefore, the study fails to examine the scope, validity, use, and management of data and information that underlie an organization's overall quality management system.

The responses to questions in the "Quality Results" category of the moderator guide were somewhat disappointing. Key pieces of information were missing (e.g., kind of product and service measures, and customer satisfaction measures) to phenomenologically assess the differences between quality-advancers and quality-starters.

CONTRIBUTIONS

This dissertation contributes to marketing by broadening the concept of quality. This study provided a richer and more robust description of quality than currently exists. In addition, this study contrasted quality-starters with quality-advancers. Some of the insights from the interviews pertained to aspects of quality-traditionalists. Exhibit 7 summarizes the findings in the form of a comparison of the two exteme groups of organizations, quality traditionalists and quality advancers. A comparison of the two extremes illuminates what actually transpires in organizations during a quality transformation.

EXHIBIT 7

COMPARISON OF QUALITY-TRADITIONALISTS/ QUALITY-ADVANCERS

Quality-Traditionalists	Quality-Advancers
- Manufacturing-driven	- Customer-driven
- Quality defined as "meeting customer specifications"	- Quality defined as "exceeding customer expectations"
- Quality, the "absence of defects" (a focus on the wrong things)	- Quality, "doing the right things right the first time"
- Narrow view of quality, Small Q	- Broad view of quality, Big Q
- Static view of quality	- Dynamic view of quality, anticipatory
- Focus on output	- Focus on process
- Number-driven, "making the numbers"	- Quality-driven "customer, number one"
- Focus on external customers	- Focus on internal and external customers
- Focus on quality, secondary	- Focus on quality, primary
- Quality, a goal	- Quality, a strategy "Quality is the way we do business ..."
- "We are told what to do"	- Empowerment and ownership
- Authoritarian management style (a boss)	- Participative management style (a coach)
- Controlled environment, (fear, distrust, silence)	- Participative environment, (loyalty, trust, openness)
- People pulling in different directions, lack of focus	- People pulling in same direction, common focus

- Rigidity	- Flexibility
- Individual-oriented	- Team-oriented
- Short-term focus	- Long-term focus, continuous improvement
- Focus on traditional Small Q in strategic plan	- Focus on Big Q in strategic plan
- Step-child treatment to quality in strategic plan	- Primary focus on quality in strategic pla
- Production-driven view of quality in strategic plan	- Customer-driven view of quality in strategic plan
- Quality improvements based on product comparisons, competition	- Quality improvements based on input from customers
- Quality comparisons, direct competitors only	- Quality comparisons, direct and indirect competitors
- Few people policies	- Many people policies
- Reward and recognition, based on volume, quotas	- Reward and recognition, based on quality and customer satisfaction
- Training, focus on traditional, Small Q skills	- Training, focus on Big Q skills
- Quality training of quality professionals	- Quality training of all employees
- People underutilized	- People well-utilized
- Lack of participation, involvement and motivation	- Total participation, involvement and motivation
- Employees controlled	- Employees empowered
- Teams focus on non-quality issues	- Teams focus on quality-related issues
- Traditional quality assurance approaches	- Newer, sophisticated approaches
- Departments working in isolation	- Cross-functional teams
- Indirect communications	- Direct communications

- Product/service measures begin with the producer	- Product/service measures begin with the customer
- Quality improvement based on Small Q	- Quality improvement based on Big Q
- Weak customer commitments	- Strong, legendary customer commitments
- Customer satisfaction measured irregularly	- Customer satisfaction measured regularly
- People answering phones are not empowered to handle and resolve customer problems and complaints	- People answering phones are empowered to handle and resolve customer problems and complaints
- Inefficient handling of problems and complaints	- Efficient handling of problems and complaints

IMPLICATIONS

This dissertation is of relevance and interest to both marketing scholars and practitioners. Marketing and managerial implications of the results and areas for future research can be outlined.

RESEARCH IMPLICATIONS

This dissertation highlights the need to explore more fully total quality. The information obtained from the interviews enables researchers to develop a more precise definition of total quality than currently exists. This serves to facilitate theory development, construct measurement, and eventually theory testing.

This study was exploratory and descriptive, and its findings offer potential for continuing research. These results can be used to develop hypotheses for quantitative testing, to refine survey methodology, and to improve questionnaire construction.

Thirty two research propositions are offered in Exhibit 8. The propositions offers the potential for extending research on total quality. Future research can be directed towards developing a measure of total quality and empirically testing these propositions.

EXHIBIT 8

PROPOSITIONAL INVENTORY

P1:	The greater the quality orientation of an organization, the higher (1) the customer orientation, (2) coordinated marketing, (3) long term focus, and (4) business performance.
P2:	The greater the quality orientation of an organization, the greater the (1) empowerment, (2) customer orientation, and (3) product and/or service quality.
P3:	The greater the quality orientation of an organization, the greater the (1) job satisfaction, and (2) customer satisfaction.
P4:	The greater the job satisfaction, the stronger the relationship between (1) empowerment, (2) espirit de corps, and (3) organizational commitment of the work force.
P5:	The greater the customer satisfaction, the greater the job satisfaction.
P6:	As companies move towards total quality, employees are more likely to understand tradeoffs.
P7:	As companies move towards total quality, they are more likely to employ customer-based definitions of quality, rather than manufacturing-based definitions.
P8:	As companies move towards total quality, they are more likely to define quality as Big Q, rather than Small Q.
P9:	As companies move towards total quality, they are more likely to define quality as dynamic, rather than static.
P10:	As companies move towards total quality, they are more likely to view quality as strategy, rather than function.
P11:	As companies move towards total quality, senior management are more likely to focus on aspects of quality within the organization.

P12: As companies move towards total quality, senior management are more likely to act as leaders, rather than managers.

P13: As companies move towards total quality, senior management are more likely to act as coaches, rather than bosses.

P14: As companies move towards total quality, senior management are more likely to adopt a participative management style, rather than authoritarian.

P15: As companies move towards total quality, senior management are more likely to create trust, rather than fear.

P16: As companies move towards total quality, employees are more likely to adopt flexible approaches, rather than rigid approaches.

P17: As companies move towards total quality, they tend to place more emphasis on quality, rather than dollars.

P18: As companies move towards total quality, they tend to have a total quality value system.

P19: As companies move towards total quality, the total quality value system tends to (1) be a joint effort, rather than an individual effort; and, (2) embrace Big Q, rather than Small Q.

P20: The larger the organization, the longer the duration of the total quality transformation.

P21: The smaller the organization, the shorter the duration of the total quality transformation.

P22: As companies move towards total quality, strategic plans tend to focus on Big Q, rather than Small Q.

P23: As companies move towards total quality, strategic quality plans and strategic plans become one, rather than seperate plans.

P24: As companies move towards total quality, quality improvements tend to be driven by customer requirements, rather than product comparisons.

P25: As companies move towards total quality, they focus on both direct and indirect competitors, rather than solely direct competitors.

P26: The higher the quality of the work force, the greater the (1) product and service quality, and (2) the business performance.

P27: As companies move towards total quality, human resource policies tend to focus more on quality improvement, rather than production.

P28: As companies move towards total quality, human resource policies tend to emphasize Big Q, rather than Small Q.

P29: As companies move towards total quality, human resource policies tend to reflect the values of the corporation.

P30: The greater the empowerment, the greater the (1) ownership, (2) control, and (3) decision making.

P31: As companies move towards total quality, there is more emphasis on (1) teamwork, (2) participation, and (3) involvement.

P32: As companies move towards total quality, there is more focus on (1) best quality-practices, (2) process, (3) measurement, and (4) prevention.

MANAGERIAL IMPLICATIONS

This dissertation research has direct managerial implications. First, this research suggests that a quality orientation may be considered a sustainable competitive advantage. Second, this research highlights the factors that can be expected to foster or discourage total quality improvement efforts. Many of these factors are controllable by managers and therefore can be altered by them to achieve total quality excellence. Overall, this dissertation gives managers a comprehensive view of what total quality is, ways to achieve it, and its likely consequences.

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