

## VARIANCE IN QUALITY of CONSUMER GOODS

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### ABSTRACT

At the turn of the century consumers were challenged to identify acceptable product quality as the basis for their purchase decisions. Quality of the new and unfamiliar goods was often poor and unreliable. Over time quality improved and became less variable. This paper provides an overview of the history of quality of consumer goods and presents the results of an empirical examination of substantive quality levels and variability over time. The results of the analysis support the notion that quality variability has decreased and substantive quality has increased. Implications for consumers and marketers are discussed.

### INTRODUCTION

In recent years the level of product quality has increased (Gruenwald, Faulds and McNulty 1993). The business press is replete with articles concerning the decrease in quality variability within firms (Peterson, Kelly, and Weber 1991) and across firms in industries such as automobiles, tires, and radios (Loden 1992; White 1990). Hamel and Prahalad (1994) suggest that by the year 2000 substantive quality will no longer be a source of competitive advantage for a firm. It will be the cost of being in the game. They further maintain that the Japanese managers understand this scenario far better than American managers.

Consumer economists and marketing scholars have given considerable attention to the study of product quality, particularly in terms of the relationship between price and quality. Consumer economists have focused on the relationship between substantive quality and price, generally concluding that there is no relationship or that the relationship is weak (Maynes 1976a; Hjorth-Anderson 1984 1988; Geistfeld 1988). Marketing scholars, by contrast, have examined the relationship between *perceived quality* and price, generally concluding that there is a relationship (Monroe and Krishnan 1983; Zeithaml 1988).

A major premise of previous work by consumer economists and marketing scholars has been that there is a wide variation in quality across offerings in any given product class. We contend that in many types of consumer markets the variation in substantive (objective) quality has narrowed. First, we present an historical overview of changing quality in consumer goods. Next, we present the empirical results of an analysis of substantive quality in consumer markets, and finally, we discuss the implications of the narrowing of quality variability for consumer behavior and consumer products firms.

### HISTORICAL OVERVIEW

In the early decades of this century, alert consumers were challenged to identify acceptable product quality as the basis for their purchase decisions. New and unfamiliar goods were being produced and sold with little information, a deluge of advertising and high pressured salesmanship (Coles 1938). Wesley Mitchell, in his seminal article on the dilemma of the homemaker stated that "*The ease with which defects of materials or workmanship can be concealed in many of these articles forces the purchaser to judge quality by price, or to depend upon the interested assurances of advertisers and shopkeepers*" (Mitchell 1912:271).

Early efforts to standardize raw materials, processes, and end products were initiated by the Federal Government. The National Bureau of Standards was established to test the quality of goods. By 1906, the Bureau was helping to formulate specifications for the goods that different governmental agencies wanted to buy. In addition to setting *minimum standards*,

the bureau used grading systems to identify various levels of *quality*, and business men visited the Bureau on a daily basis for help with standards and testing. Thus, business and government were guided by standards and specifications early in the century (Silbur 1983: 2-4). The consumer, on the other hand, was forced to fend for herself. She was confronted by new and unfamiliar products offered to solve problems she didn't know she had.<sup>1</sup> New products appeared on the local retail shelves from producers across the country-- with unfamiliar names, in unstandardized package sizes and of indistinguishable quality.

Not only was overall quality often poor, but quality was highly variable within products produced by the same manufacturer and available at the same retail stores. For example, studies on a variety of consumer goods (bed sheets, canned fruits, canned vegetables) conducted by the Federal Trade Commission and the University of Missouri in 1933 found "*wide variation in quality of vegetables and fruits packed under the identical labels* (Coles 1938:418).

Branded products were promoted as the panacea. Consumers were urged, by extensive advertising, to buy name brands, as the name signified a measure of quality. National Biscuit, Heinz Soup, Armour Meat, Standard Oil and others initiated the concept of *family branding* - placing one banner on all products and suggesting that a wise consumer should "*always buy from the same excellent firm*" (Silbur 1983). However, there was considerable variability in the quality of goods because of producers' lack of control over manufacturing sources and processes. There was often variation in raw materials. Goods produced at different plants could vary due to differing standards, and such marketing variables as grading, packing, and transportation further contributed to quality variability (Coles 1938:417).

Consumer discontent grew over the difficulty in choosing new and unfamiliar products offered for sale under numerous brand names, which themselves were not very reliable (Coles 1938). Stuart Chase and F.J. Schlink brought the dilemma of the consumer to the forefront with the publication of their book, *Your Money's Worth* (1928). They noted that the government had developed 11,000 specifications covering foodstuffs, soap, hooks and eyes and numerous other products. Industry had also developed thousands of specifications for products they purchased (Silbur 1983:27). At the book's end they proposed a *Consumers' Club* to test and provide information, to afford the consumer the same information available to government and industrial buyers. In 1929, Chase and Schlink formed *Consumers' Research, Inc.* to conduct scientific testing and provide consumers with the information needed to make wise purchase decisions. During the decade of the thirties, other consumer testing organizations grew up such as those of department stores (i.e. J.C. Penney) and trade associations set up consumer testing programs (Hermann 1970).

Minimum performance standards for consumer products proliferated during the 1930's as a result of government action, trade associations, and private testing organizations. Consumer's Union was founded in 1936 following a strike at Consumers' Research. CU took on a more activist posture than the parent organization. Articles in *Consumer Reports* addressed injustices in the work place and the marketplace. Its leaders were effective in lobbying government. During the decade, legislation<sup>2</sup> was passed to help standardize consumer goods, an effort that contributed to more consistent quality (Feldman 1976). CU stimulated improved product quality by enhancing the sales of superior products. Further, manufacturers stood to benefit by the free *promotion* if they produced quality. A good rating in *Consumer Reports* could improve their volume of sales and a poor rating could spell disaster (Silbur 1983: 33).

As a result of standardization, product improvement over the product life cycle, legislation, improved manufacturing processes, consumer education, and increased international competition, product variability has decreased substantially over time. Morris (1971) found that the number of "not acceptable" product ratings by *Consumer Reports* had dropped significantly during the previous decade. Twelve percent of the products tested in 1962 were rated "not acceptable" in contrast to only 2.9 percent receiving this rating in 1970. In 1962, 65 percent of the products tested reported no unacceptable variants, whereas by 1970 the proportion had grown to 85 percent. In a 1990 replication, only 1.2 percent of the products were rated "not acceptable," and 91 percent of the tests reported no unacceptable variants (Carsky, Dickinson and Smith 1995).

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<sup>1</sup>For example, *Odorono*, the first deodorant was offered to women in 1911; deodorants for men did not make their appearance until after World War II (Carsky and Zuckerman 1991).

<sup>2</sup>Food Drug and Cosmetic Act 1938; Wheeler Lea Act 1938 and Wool Products Labeling Act 1939.

Both substantive and perceived quality variance has decreased (Hjorth-Anderson 1991; Loden 1992). Moreover, the variability in equality within many products is a variance about a mean that is often above the needs of specific groups of consumers (Hjorth-Anderson 1988). In examining the price/quality relationship of consumer goods tested by organizations in three countries, Hjorth-Anderson (1991) found the correlations to be positive in 64% to 70% of the tests. In addition, overall quality was found to be agglomerated at the high end. Findings of Gruenwald, Faulds and McNulty (1993) support Hjorth-Anderson (1991) and further attest that these results are not dependent on the number of attributes on which the product was evaluated nor on the organization performing the test. They found similar agglomeration patterns for durable and non-durable goods, for search and experience goods. Both Gruenwald, et al (1993) and Hjorth-Anderson (1991) suggest that the market consistently provides high quality attributes and does not fail consumers seeking high quality products, but that the market fails consumers searching for low-quality products. Thus some consumers may experience "losses" by being forced to pay for more quality than they desire (Rice 1992).

## DEFINING QUALITY

The term, *quality*, can be broadly defined as "excellence" or "superiority" (Zeithaml 1988:3). However, it has been defined and approached in numerous ways, and as Holbrook observed, "one finds almost as many definitions of quality as writers on the subject" (Holbrook and Corfinan 1985:32). The many definitions can generally be subsumed under two broad classifications of *perceived quality* and *objective quality*.

Garvin (1988) offers four different definitions of quality: transcendent, product-based, user-based, and value based. Steencamp (1989) describes four: the metaphysical, perceived, economic and production management. Holbrook (1994) defines and classifies quality along three dimensions incorporating eight definitional approaches to the subject. Implicit/explicit and mechanistic/humanistic dimensions identify four broad types of quality definitions. *Production-based* (inputs and processes of production), and *reliability-based* (durability) quality definitions are mechanistic with the former being implicit and the latter explicit. *Qualitative* and *features-based* definitions rely on humanistic response, with the former being implicit and the latter explicitly relying on a subjective response to certain properties (e.g. cashmere). Holbrook's third dimension distinguishes *conceptual* definitions from those which are *operational*.

Larson and Lusch (1992) offer a traditional marketing definition of product quality as "the degree of conformance, on all relevant attributes, to customer requirements." This definition does not differ in substance from Maynes: "Quality can be defined as the extent to which a variety of a product provides the characteristics the individual desires" (Maynes 1976:195). Both of these definitions appear to describe *perceived quality* - "the consumer's judgement about a product's overall excellence or superiority" (Zeithaml 1988). And the consumer's judgement is not easily measured in an objective manner. Thus the transcendent, user-based and value-based definitions of Garvin (1988) as well as the metaphysical and perceived definitions of Steencamp (1989) and the humanistic, explicit, qualitative definitions of Holbrook (1994) can be subsumed under *perceived quality*.

There is evidence that perceived quality variability has decreased in recent years. According to a study by an international advertising agency, nearly two-thirds of the consumers world-wide believe that there are "no relevant or discernible differences" between brands across a broad range of products. Loden (1992) suggests that marketers currently operate in an environment of parity products. Competitive advantages are fleeting at best. Loden reflects a Roper study indicating that "there were little differences between premium brands and other brands." Industry studies have also indicated that consumers perceive more products as commodities distinguished primarily by price (Giges 1988; Landler 1991).

## SUBSTANTIVE QUALITY

The term, *substantive quality*, is used in this paper to describe quality in the engineering tradition or where quality is "conformance to requirements" (Crosby 1979:15) or "measured quality" (Geistfeld 1988:144). It refers to *objective quality* which can serve as an umbrella term to incorporate Holbrook's (1994) intrinsic, mechanistic, production and reliability based definitions, Garvin's (1988) product-based and Steencamp's (1989) production management. According to Zeithaml (1988), *objective quality* "refers to measurable and verifiable superiority on some predetermined ideal standard or standards...ratings from sources such as *Consumer Reports* are used to operationalize the construct..." (p. 4). Zeithaml (1988) argues that *objective quality* may not truly exist as the measures chosen to operationalize "quality" are based on the

managers' perceptions of what is important, and these will differ (p. 4, 5). Thus, we chose to use the term *substantive quality* which refers to explicit, and measured quality. The emphasis is on how a specific product performs compared to others on attributes thought by the researcher to be important to particular types of customers. Substantive quality is not totally objective.

There is considerable evidence that product quality has increased within recent years (Gruenwald, Faulds and McNulty 1993). Global competition along with other factors has contributed to the increase in the level of substantive quality in recent years (Juran 1993). To highlight that insight, Juran has predicted that the 21st century will be the "Century of Quality."

Information and labeling requirements such as the energy labels on major appliances, and food labels listing the amount of fiber and salt have enabled consumers to make *rational* decisions in selecting products that provide higher levels of desirable characteristics. Since 1984 the automobile quality reports of J.D. Power and Associates have been at least partially responsible for reducing the number of defects per new automobile. Industry devised product standards have raised quality. In the computer industry, for example, the industry acceptance of the DOS operating system paved the way for generic, interchangeable components, only to be followed by Microsoft Windows as the standard for both stand alone and networked computers.

### AN ANALYSIS OF SUBSTANTIVE QUALITY

There are many statements in the academic and popular literature that the level of quality has increased. It is unlikely that the level of quality would increase without the variance of the quality decreasing. The very competitive pressures that increased the level of quality would appear to be operative in also decreasing the variance. Indeed, the first element in a quality program for a firm would appear to be the elimination of substandard merchandise or services thereby decreasing quality variance. We contend that in many consumer markets the variation in substantive quality has decreased. In this section we present the results of an empirical analysis of the changing quality, and narrowing of quality variance.

#### METHODOLOGY

To test the variance in substantive quality we needed objective measures from a large sample of products. *Consumer Reports*, published by Consumers Union, is uniquely positioned to provide such data. Consumers Union is an independent, not-for-profit organization, not affiliated with firms whose products it evaluates. Ratings are based on laboratory tests, use experiments, and/or expert judgements of purchased samples (Thorelli and Thorelli 1977).

This database has its weaknesses. *Consumer Reports* product evaluations are not random. Consumer's Union selects products for testing on the basis of consumer demand for information. Thus, products whose sales are on the rise, or products new to the market are tested at more frequent intervals. Older products and frequently purchased products are not tested as often (Montgomery and Wernerfelt 1992). Therefore, over a longer period of time, comparisons are difficult. For example, in August 1979, *Consumer Reports* tested toasters. The report included test results for 13 models of four slice toasters, 12 models of two slice toasters and four toaster ovens which were compared on three characteristics. In September 1990 only six four-slice toasters were tested, the number of two-slice toasters increased to 19 and toaster ovens increased to 20. These tests clearly reflect changing lifestyles. Few of today's smaller families require four-slice toasters, and many single person households prefer the multi-purpose toaster oven. However, on balance, given the large sample size used for this study, these issues are unlikely to cause problems.

*Consumer Reports* test results from the 1978-1980 issues formed the baseline for investigating the change in quality variation over time. Hjorth-Anderson (198) used this same data base in his examination of quality and efficiency of markets for consumer products. He used data for all test results in the time period with the exception of automobiles, foodstuffs, tests where the number of variants was less than five and tests where the number of characteristics measured was less than three. The baseline data for this study followed the precedent of Hjorth-Anderson (1984).

To assess changes in variability in quality over time, product test results from the 1978-1980 issues of *Consumer Reports* were compared to test results for the same products which were repeated ten years later (1988-1990). Of the 73

products included in the Hjorth-Anderson study, 34 were tested again between 1988-1990 ( $t_1$ ). Five products tested in the baseline year were retested between 1984 and 1987, but not in the 1988-1990 period. For these products, the mid-decade results were compared to the baseline test and were assigned to ( $t_2$ ). Another four products tested in the baseline year, were only retested between 1991 and 1993. These results were substituted for the missing 1988-1990 tests and included in ( $t_3$ ). The data set includes test results for 2295 product specimens tested in two time periods.

## ANALYSIS

Product test results were obtained from the issues of *Consumer Reports*. Product test information was entered directly onto the computer. In accordance with the method used by Hjorth-Anderson, the year of the test, month of the test, an assigned product identification number, and price were entered. The interval quality score assigned by *Consumer Reports* was entered when such a score was available.<sup>3</sup> The ordinal ratings for each characteristic were scored (excellent=5; very good=4; good=3; fair=2; poor=1). Two other sets of characteristics in the reports, the technical data, and comments which enumerate advantages/disadvantages were not included in the analyses.

A coefficient of variation was computed for each product test in each year. The date (month and year) of the test, and the number of variants in each product category are reported along with the mean quality score, the standard deviation, the quality score (when available), and the zscore mean of the characteristics for each test (or standard deviation of the prices).

Results were obtained on 47 product tests from the 1978-1980 *Consumer Reports* which were replicated later in the decade. Not all replications were conducted between 1988-1990. Many of the products for which Hjorth-Anderson reported data were not replicated during this time period nor were they replicated during the middle years (1984-1987) of the decade. Tennis racquets, mopeds, and bicycles, among other products were not retested.

Of the products tested in both decades, quality variability decreased over the decade in 28 (59.6%) of the product tests. In all but four of the 19 tests for which the variability increased, the level of quality measured by the mean of the ordinal attribute scales increased. It can also be seen that for 25 of the tests, differences in quality variability between the two time periods were significant; sixteen of which represented decreases in variability. For 15 of the product tests, changes in ordinally measured quality were statistically significant. In only two of these 15 did the measures indicate a decrease in quality. For the ratio scaled overall quality scores, available for both time periods in only seven of the tests, quality appears to have increased dramatically (except for the binoculars).

Analysis of variance tests were conducted to determine whether the increase in quality was a factor of the product life cycle, whether quality improved with the length of time products were on the market. For these ANOVA tests, all specimens from each time period were included in the analyses. Some of the products were tested in both time periods and some were only tested in  $t_1$  or  $t_3$ . Overall, the results show that quality variability has decreased over time and quality has increased. As shown in Table 1, the Anova F was significant for differences in the coefficient of variation, the mean quality ratings and the quality scores. Post hoc tests revealed that changes were greatest during  $t_3$ . None of the *Consumer Reports* product tests used in this study had any variants with "not acceptable" ratings.

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<sup>3</sup>Interval quality scores are typically available on electronics. Quality scores were available for 13 of the products in the study.

Table 1: Analysis of Variance Tables for Statistical Tests

	N	Mean	s.d.	Sum of Squares	ANOVA Summary		
					df	F	Sig.
<b>Coefficient of Variation</b>							
1978-1980	1013	.3365	.1658	.400	2	8.207	.000
1984-1987	513	.3179	.1666	57.583	24		
1988-1992	840	.3074	.1361				
<b>Mean Quality Ratings (z)</b>							
	N	Mean	s.d.				
1978-1980	901	-0.0963	.9961	18.010	2	9.005	.000
1984-1987	397	-0.0207	1.0184	2052.990	2052		
1988-1992	774	0.1161	.9846				
<b>Quality Scores</b>							
	N	Mean	s.d.				
1978-1980	161	54.4923	12.470	61667.092	2	258.582	.000
1984-1987	36	74.3056	7.094	52227.471	438		
1990-1992	221	82.2036	7.822				

## DISCUSSION

*Consumer Reports* data, while widely used to measure quality, have been criticized for many shortcomings (e.g. Maynes 1988). Most research studies using this data source have tried to discern whether or not a price/quality relationship exists. Our purpose was only to measure quality changes over time. We hypothesized that quality of consumer products has increased over time and also that the variability in quality has decreased over time. However, in assessing quality with this data set, several points should be noted.

First, repeated tests on products do not necessarily focus on the same attributes. Why not? It could be that as products move through the life cycle, they become more complex, offering more features, or improvements that might differentiate variants. While the product is still in the growth stages of the PLC, more entrants into the market might have different features, and different entrants into the market may have alternative strengths and weaknesses.

Second, when *Consumer Reports* tests quality, they are not necessarily looking at the variety of product features. Additional features typically raise the price of a product variant and may make the variant more desirable to the consumer. To illustrate these points, we may look at one product, in common current use: the VCR.

In October 1980, *Consumer Reports* tested video cassette recorders. Of the eight models tested, three were portables. Of the five consoles, two were Betamax format and three were VHS format; CU preferred the Betamax format machines. Models were rated on six attributes: three for picture clarity (at fast speed, slow speed, slowest speed), two for sound quality (freedom from flutter and frequency range) and for convenience (Sony \$1350 Zenith \$1350 Magnavox \$1500 Panasonic \$1295 and RCA \$1395).

In March 1990, eighteen low-cost VCRs were tested on 10 attributes including convenience, sensitivity in VHF/UHF, selectivity, flutter SP/EP, signal-to-noise ratio at SP/EP, frequency response SP/EP. The interval quality scores ranged from 70 to 90 with differences in 10 points "judged not very significant (p. 170). Prices for the best rated models (scores 80-90) ranged from \$230 to \$315. Of the 14 advantages noted (additional features), the lowest priced model had only one: "has multiple speed cue and review." The highest price model had six of the additional features.

Binoculars were one of the products for which quality variability increased and the mean ratings of the ordinal

measures of attributes decreased. The overall quality scores increased slightly between the first and second tests. In March 1980, *Consumer Reports* tested 23 varieties of binoculars on six characteristics including freedom from prism cutoff, ease of seeing full field with and without glasses, construction quality, image quality, and overall user judgement. Overall scores ranged from 65 to 92 with differences of less than 15 points judged not very significant (p. 200). Prices for models scoring between 77 and 92 points ranged from \$136 to \$424.

In July 1989, binoculars were again tested. This time 25 models were compared on eight characteristics including convenience, focus mechanism, image - center and general alignment, optical defects, coating and eyeglass use. Overall scores ranged from 65 to 95 with differences of 10 points judged not very significant. Prices for models scoring between 85 and 95 ranged from \$70-128 to \$1140-1400. These were the range of prices CU shoppers paid or lowest advertised price for the New York area.

Overall the results showed increases in product quality over time to be statistically significant. Comparisons of product tests conducted in two decades found that quality improved among products that were on the market for ten years, as expected. Over the product life cycle, products improve; there is more standardization and less variability in quality. Over the life cycle product variants which are inferior tend to leave the market. Perhaps the more interesting finding of this study is that products new to the market and first tested in  $t_1$  were less variable across variants than those introduced in the earlier time period. In addition, overall quality was better among all products tested in the later time period.

The results clearly support the hypothesis that quality variability has decreased over time, and that overall product quality has increased. Results support anecdotal evidence of the leveling of quality, particularly those surveys which indicate that consumers perceive little difference between premium brands and others (Giges 1988), or that marketers operate in an environment of parity products (Loden 1992). These findings of little difference in quality across brands have implications for consumers and for marketing practitioners.

## IMPLICATIONS

Since the turn of the century the behavior of consumers and of marketers has been predicated on quality variability and price as a cue to quality. Consumers have been encouraged to use a marginal rule starting with the lowest quality specimen. In moving up on quality the consumer asked, "Is the improvement in quality worth the increased cost?" (Maynes 1976:66). Conversely, many marketers positioned their offerings high on the quality continuum. Reputation for "high quality" was facilitated, in part, by a widely recognized brand name. A decrease in the quality variance in many categories of consumer goods will have substantial implications for consumers and for marketers.

### IMPLICATIONS FOR CONSUMERS

If the quality of a product or service is the same among all options, then consumer choice should be based on criteria other than the price/quality trade-off. The narrower the difference between quality of the alternatives, the more the choice will be based on other factors. Indeed, there is evidence that the consumer has redefined value by reprioritized variables in the non-product submixes of his/her decision calculus. The concept of value has been expanded beyond price/quality to include convenience of purchase, after-sale service, dependability, and additional product features and consumers have expanded their choice sets.

The stabilization of quality in many types of goods has facilitated the growth of retailers that emphasize *value for the dollar* and *low prices*. Consumers are increasingly shopping at discount retailers to meet their needs (Kahn 1997). National brands are often sold side-by-side with lesser-known brands. Consumers might accept a less than top supplier brand in a wide range of products (e.g. canned food to television sets) because all can be expected to perform reasonably well.

Decreased variability of quality has contributed to increased purchases of private brands in some product categories. The increase in private brand purchases is a result of the real increase in actual product quality and consumers' perceptions of parity between name brand and private brand goods (Private Label... 1997; White-Sax 1996). Private brands, when priced substantially below their name brand competitors, generally offer better value.

Convenience is a key element of choice in today's economy. Consumers expecting all products to be of similar durability (one measure of quality) will select products that are more convenient: easy to use, easy to acquire, and/or easy to maintain. They will also choose products on the basis of convenience related features and/or purchase from a retailer who offers the greatest locational convenience or services which simplify consumer transactions.

## IMPLICATIONS FOR MARKETERS

Substantive quality and the perception of large differences in perceived quality are still important ways for many firms to differentiate themselves in the market place. However, as changes in the actual and perceived quality variance among competing brands have occurred, other elements in the marketing mix have increased in importance.

Price has clearly been recognized as more important in the consummation of many final sales to consumers. Sales promotions such as manufacturers' coupons often doubled by retailers have been important price promotions over the past two decades (Litwack and Maline 1994). Manufacturers have long been aware of the detrimental effects of couponing on brand loyalty (Blattenberg, Breisch and Fox 1995) and have been attempting to eliminate them. In 1993, Proctor & Gamble decreased emphasis on coupons in favor of slashing prices in many product lines (General Mills US...1994). However, a perusal of the newspaper in 1997 reveals that manufacturers are still using coupon, in an apparent response to consumer demand. In a recent survey of single-copy buyers of the *Hartford Courant*, "coupons" was the reason most frequently given (20%) when asked if they purchased the Sunday paper for any special reason (Carsky 1997).

A decrease in the perceived variance of quality means that consumers have more flexibility in outlets at which to purchase. In the extreme, if a product is available almost anywhere, the location or place of purchase becomes less important. Retailers have to find other ways to differentiate themselves in the eyes of consumers. The behavior of the retailer, price philosophies and the like, become more important to the consumer and the retailer in general becomes more important to the supplier.

Quality leveling has contributed to a decline in customer brand loyalty. Manufacturers and retailers are continually seeking means to bring the customer back. Frequent shopper cards like *frequent flyer miles* are strategies used to offset the loss of loyalty associated with the decline in product differentiation.

There should be less consumer search. Consumers are often searching for differences among alternatives to satisfy needs. The smaller the differences among alternatives, the less such search would be relevant. Some models of shopping behavior posit a *non-compensatory conjunctive* rule whereby all variants above some minimum substantive quality are included in the choice set (Carsky, Smith, and Dickinson 1995).

Personal selling efforts focusing on creating the illusion of differences among products may become less effective. However, systems selling and relationship marketing between the manufacturer and the retailer have become more important. In the era of lessened quality differences between brands, retailers' power has increased *vis-a-vis* the manufacturer. Indeed large retailers such as Wal-Mart hold considerable power over suppliers. Relationship, trust, and meeting *customer* needs are keys to success for manufacturers, suppliers, and retailers.

## CONCLUSIONS

At the beginning of the century consumers were challenged to identify acceptable product quality in choosing new and unfamiliar goods, often shoddily constructed and sold by unscrupulous merchants. Poor quality and variability in product quality posed a constant dilemma to the consumer. Over time product quality improved as a result of industry standardization, legislation, better manufacturing processes, international competition, and consumer information from such sources as *Consumer Reports*. Variability in quality continued. As recently as 1976, Maynes advised consumers to use a marginal rule starting with the lowest quality specimen. In moving up on quality, the consumer asks "Is the improvement in quality worth the increased cost?" (Maynes 1976:66).

Recent studies conclude that variability in product quality has decreased and that substantive quality has increased in most product categories including durable and non-durable, search and experience goods. Our own investigation,



reported herein, validated the findings of previous studies. We found clear evidence that quality differences have decreased, even among new entrants to the marketplace. These findings have implications for both consumers and marketing practitioners. Consumers' search is simplified and in many situations it is no longer necessary to focus on quality differences. The elements of price, retailer services, and convenience become more important.

In 1997 quality is still an important means for many companies to differentiate their product and service offerings. The consumers interest in quality will not die out any time soon. Consumers expect substantive quality; they expect products to perform their principle functions. As suggested by Hamel and Prahalad (1994), by the year 2000 substantive quality may no longer be a source of competitive advantage for the firm. It will be the cost of being in the game.

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