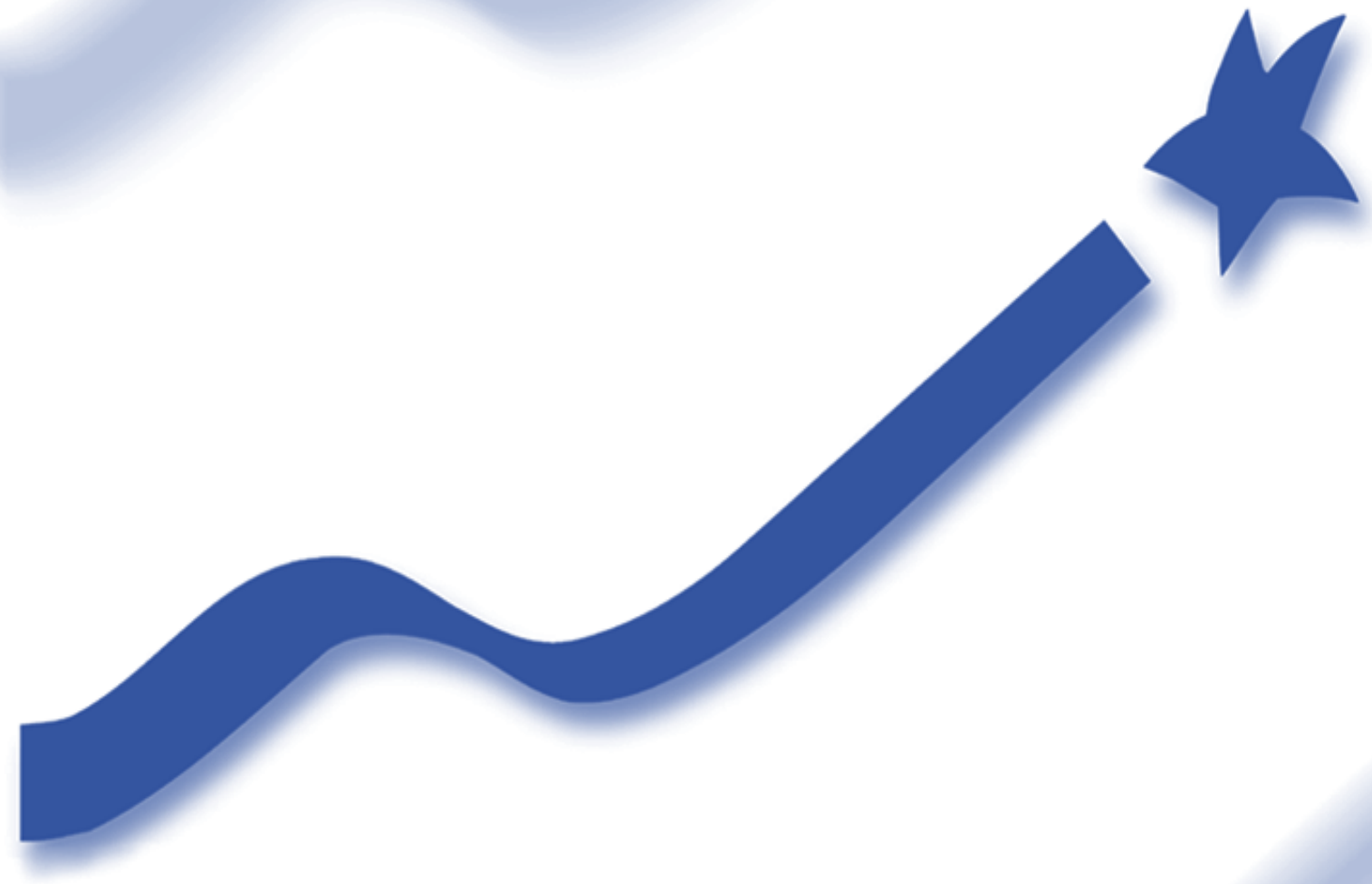
American Customer Satisfaction Index

Methodology Report



June 2008

ACSI
American Customer Satisfaction Index™

Methodology

MICHIGAN
ROSS SCHOOL OF BUSINESS

ASQ
AMERICAN SOCIETY FOR QUALITY™

CFI CLAES FORNELL INTERNATIONAL
Group

American Customer Satisfaction Index

Methodology Report

June 2008

PREFACE

ACSI is designed, conducted, and analyzed by the National Quality Research Center (NQRC), Stephen M. Ross School of Business at the University of Michigan. The ACSI technical staff includes:

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National Update reports on customer satisfaction are produced quarterly and delivered electronically on request. To order reports, visit the ACSI Bookstore on the Web at: www.theacsi.org.

CONTENTS

I. INTRODUCTION

The American Customer Satisfaction Index (ACSI) is a uniform, national, cross-industry measure of satisfaction with the quality of goods and services available to household consumers in the United States. Established in 1994, ACSI is both a trend measure and a benchmark for 200 U.S. and international companies to compare themselves with firms in their own or other industries. It also provides measures by which federal agencies, two local government services, and the United States Postal Service can track user satisfaction with the quality of their services over time, and compare their satisfaction to satisfaction with services provided in the private sector.

Research shows that ACSI is predictive of corporate performance, growth in the Gross Domestic Product (GDP), and changes in consumer spending (Fornell, commentaries posted quarterly on the Web site: www.theacsi.org).

Produced by a consortium of the Stephen M. Ross School of Business at the University of Michigan, ASQ,[1] and CFI Group, ACSI is funded by multiple sources. These are: (1) annual fees from corporate subscribers, (2) ACSI-related research conducted for corporate subscribers, (3) licensing of the ACSI model in the United States and in a number of other countries to produce national Customer Satisfaction Indices (CSIs), and (4) sponsorship of the measurement and analyses of e-business and e-commerce industries by Foresee Results.

The National Quality Research Center (NQRC) at Michigan's Ross School of Business is the research and production center for the index, data analyses, and report writing. ASQ distributes online update reports on economic sectors and other reports. CFI Group provides software design and assistance, as well as marketing consulting.

The ACSI structural equation statistical models, discussed in Chapter II, provide customer satisfaction indices (on 0 to 100 scales), along with indices of antecedents (drivers or causes) and outcomes of satisfaction with the products and services of specific companies, government agencies, and industries for ten economic sectors that market to U.S. household consumers. The sectors are broadly representative of the national economy: (1) Utilities, (2) Manufacturing/Nondurable Goods, (3) Manufacturing/Durable Goods, (4) Retail Trade, (5) Transportation and Warehousing, (6) Information, (7) Finance and Insurance, (8) Health Care and Social Assistance, (9) Accommodation and Food Services,

[1]At the time of ACSI's establishment, this organization was called the American Society for Quality Control.

and (10) Public Administration. ACSI also measures e-business and e-commerce industries on the Internet, but the companies within these fall under the other economic sectors.

Each company or government service, industry, and sector is measured annually. The national index is updated quarterly, on a rolling basis, with new data for one or more measured sectors replacing data from the prior year.

A. HISTORY

In the early 1990s, ASQ saw the need for a national measure of quality. In 1990-91, the organization commissioned National Economic Research Associates (NERA) to determine whether a national, cross-company, cross-industry measure existed or could be developed. NERA examined 60 different approaches to measuring quality. There was no standard definition of quality and indices for different categories of products and services in use in the United States were not comparable. It was not possible to assign values to the separate measures of quality in order to aggregate these into a national index. A key failing was the inability to obtain quality measures that translated to customer-perceived value.

NERA concluded that a comprehensive assessment of quality required a mechanism that assigned values to dimensions of quality that influence customer behavior and that any design that did not reflect the customer's voice and notion of value would not meet the goal of a national quality index. NERA recommended adaptation of the Swedish Customer Satisfaction Barometer to the United States.

According to the NERA report (National Economic Research Associates, 1991), the Swedish Barometer, established in 1989, used an econometric model designed by Claes Fornell and colleagues at the University of Michigan's NQRC that (1) was the most comprehensive effort to date to measure product and service quality; (2) illustrated the feasibility of using the survey approach to assess quality on a broad scale; and (3) recognized the necessity of relating measures of quality to customer behavior (Fornell, 1992).

With funding from ASQ and individual corporations, NQRC conducted an extensive design, development, and pretest phase in 1993. In the following year, the baseline American Customer Satisfaction Index was produced covering 7 sectors of the economy, 30 industries, and 180 companies. The baseline ACSI study demonstrated that household screening to identify qualified customers, interviews of these customers with the NQRC-designed survey questionnaire, and econometric modeling could be used on a large scale to produce comparable indices across a wide variety of companies and industries in the United States.

As of 2008, ACSI covers 43 industries (including those in e-business and e-commerce) and over 200 companies and federal or local government services. ACSI measures satisfaction with companies that produce 50% of GDP and the specific products and services of these companies that account for 41%. The ACSI's first 14 years provided both point-in-time and trend measures of satisfaction based on approximately one million interviews.

ACSI measures ten economic sectors in the North American Industry Classification System (NAICS) that produce products and services sold directly to household customers. These sectors are: (1) Utilities, (2) Manufacturing/Nondurable Goods, (3) Manufacturing/ Durable Goods, (4) Retail Trade, (5) Transportation and Warehousing, (6) Information, (7) Finance and Insurance, (8) Health Care and Social Assistance, (9) Accommodation and Food Services, and (10) Public Administration.[2]

Not included in ACSI are Agriculture/Forestry/Fishing and Hunting, Mining, Construction, Wholesale Trade, Real Estate/Rental/Leasing, Professional/Scientific/ Technical Services, Management of Companies and Enterprises, Administrative Support/Waste Management and Remediation (although satisfaction with solid waste disposal provided by local governments is measured in ACSI), Educational Services (although satisfaction with some educational services provided by the federal government is measured), Arts/Entertainment/Recreation, and Other Services.

Within each sector, satisfaction is measured with large companies in representative industries. Within each industry, 2 to 30 companies are selected (although in most industries the number is 4 to 8 companies). The companies chosen are those with the largest U.S. market shares in each industry, whether or not the company is a domestic or a non-U.S. company. It is the customers of these companies who are identified by interview screening and then interviewed about their satisfaction with the specific company.

Each company, industry, and sector is measured annually. The national ACSI score is updated quarterly, on a rolling basis, with new data for one or more measured sectors replacing data from the prior year.

[2]While the NAICS groups nondurable goods and durable goods together in a single manufacturing sector, ACSI measures these as two separate sectors.

Table 1: Data Collection and Sector Update Schedule

Sector	Data Collection Period	ACSI Release of Results
Utilities, Transportation & Warehousing, Information, Health Care & Social Assistance, Accommodation & Food Services	January to March	May
Manufacturing/Durable Goods, E-Business	April to June	August
Manufacturing/Nondurable Goods	July to September	November
Retail Trade, Finance & Insurance, E-Commerce	October to December	February
Public Administration	August to November	December

The companies for which satisfaction is measured in ACSI as of 2007 are listed in Appendix A, along with their revenues and Fortune 1000 ranks.

B. METHODOLOGY IN BRIEF

The ACSI methodology is distinguished from other measures of quality by four significant characteristics:

1. ACSI has a uniform, customer-based definition of quality: "customer satisfaction with the quality of goods and services purchased and used."
2. ACSI treats satisfaction with quality as a cumulative experience, rather than a most-recent-transaction experience.
3. ACSI uses a cause-and-effect model that measures satisfaction quantitatively as the result of survey-measured input of customer expectations, perceptions of quality, and perceptions of value (i.e., quality for cost).
4. The ACSI model links satisfaction quantitatively with customer-survey-measured outcomes: complaints (a negative outcome) and customer loyalty (a positive outcome). Customer loyalty is derived from measures of customer retention and price tolerance.

ACSI uses an empirically tested, cause-and-effect model. It is a multi-equation, latent variable, econometric model that produces four levels of composite index measures. These are: (1) a national customer satisfaction index; (2) indices for 10 sectors of the economy;

(3) indices for 43 industries; and (4) indices for over 200 major companies and federal or local government services, including indices for an "all others" category in each industry.

Input to the econometric modeling comes from surveys conducted on a computer-assisted-telephone-interviewing (CATI) system. Customers are selected randomly from national and regional probability samples of continental U.S households. Random-digit-dial (RDD) selection of households includes those with both listed and unlisted numbers. Selection of a respondent within the household based on the individual with the most recent birthday provides a representative distribution of respondents by age, gender, and other characteristics. For e-business and e-commerce companies, the tasks of selecting user samples, screening respondents, and interviewing customers are all done on the Internet.

To be eligible for interview, either by telephone or online, a prospective respondent must qualify as the purchaser of specific products or services within defined time periods. These vary from three years for the purchase of major durables, to "in the last month" for frequently purchased consumer goods and services, to currently having utility services, insurance policies, or bank accounts in one's own name. *Thus the definition of "customer" in the American Customer Satisfaction Index is an individual chosen randomly from a large universe of potential buyers who qualifies by recent experience as a purchaser/user of products or services of specific companies or agencies that supply household consumers in the continental United States.*

The process of qualifying respondents as customers of specific products and services and thus eligible for interview is described in Chapter V, *Household Survey Sample.*

Completed survey interviews are input to the econometric model described in Chapter II, *Purpose, Econometric Modeling, and Index Properties,* which computes the indices at company/government service, industry, sector, and national levels.

II. PURPOSE, ECONOMETRIC MODELING, AND INDEX PROPERTIES

This chapter discusses the purpose of the American Customer Satisfaction Index. The central part of this discussion outlines the ACSI model, the desirable properties of an index like ACSI, and the extent to which ACSI can be said to have these properties. ACSI aims to contribute to a more accurate and comprehensive picture of economic output as a measure of national customer satisfaction for the United States, as a long-term indicator of economic returns at the national level, and as an indicator of financial success for individual companies. Accomplishing these objectives requires rigorous and technically sound measurement and statistical procedures that are described in the following sections.

A. PURPOSE OF MEASUREMENT

The purpose of ACSI is to provide a perspective for understanding the U.S. economy and for understanding industry, company, and national competitiveness. The perspective used by ACSI is that of the customer's experience with the quality received from goods and services available in the U.S. marketplace, and the satisfaction and loyalty of consumers based on those experiences.

Traditionally, productivity has been considered the key to competitiveness for companies, industries, and nations. Ideally, productivity should reflect not only the efficiency and quantity of production, but also how quality and service are incorporated into market prices. In practice, however, productivity measures often fall short, particularly in the service sector where the value of improved or reduced quality is not easily captured.

Measurement of productivity relates to measurement of price changes. As noted by several economists (for example, Gordon, 1990), the measurement of prices would be straightforward if there were a single, generally accepted index of economic and social well-being that would indicate how much better or worse off consumers are each year. Without good measurement of both price and quality—and how these change over time—assessment of productivity is extremely difficult.

As an economic indicator, ACSI provides a context within which to interpret both price and productivity changes. One objective of ACSI is to help with this interpretation by capturing the elusive character of a product (attributes, price, market fit) from the consumer perspective.

Economic data attempt to capture the full range of transactions between buyers and sellers in many types of markets. ACSI measures the overall satisfaction of buyers in household consumer markets, but it is not limited to single, finite transactions *per se*. Rather, it is subjective evaluations of the goods and services acquired and consumed in the United States that are measured. In the final analysis, all human decision making is subjective. It is the customer's evaluation—not engineering standards—that ultimately affects the demand curve. Measurement of that evaluation, however, does not necessarily need to be subjective.

Customer satisfaction also incorporates price, how well companies have chosen their customers (or the matching principle), and the resulting degree of fit between the nature of demand and the nature of supply. Further, customer satisfaction, in contrast to quality, assumes actual consumption experience. Since most products and services are repeat purchases, customer satisfaction has a large effect on demand.

B. ECONOMETRIC MODELING

1. Model and Methodology

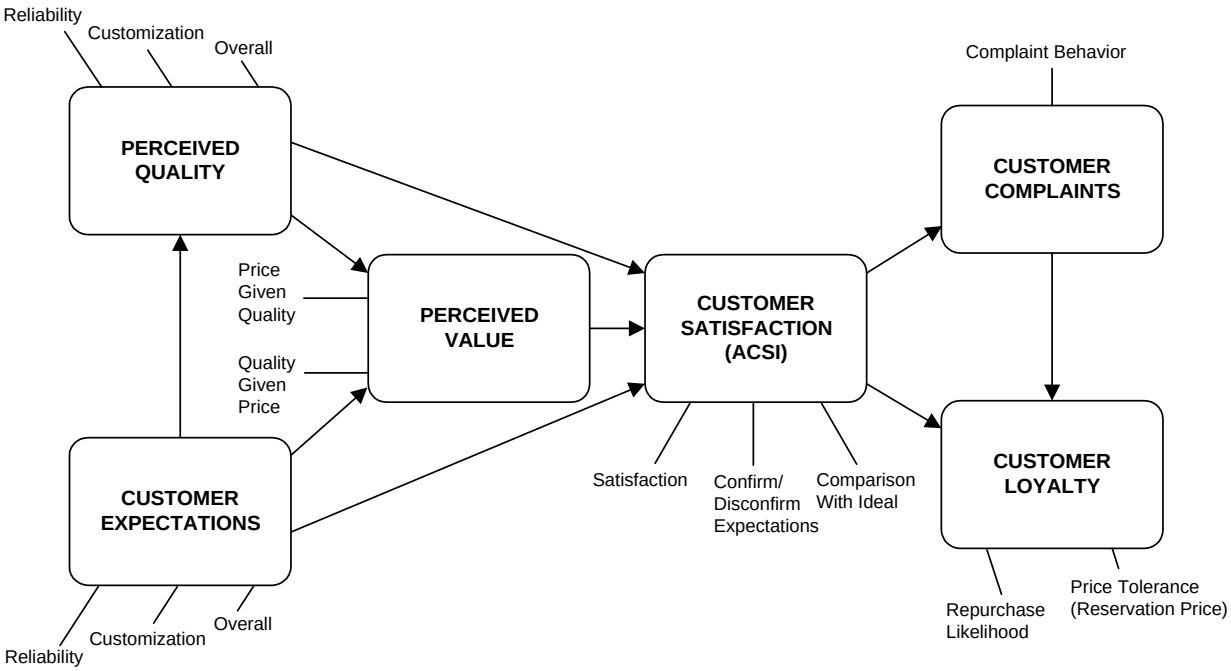
The ACSI methodology has four basic properties:

1. ACSI uses an econometric model with measures of an index of satisfaction (ACSI) and related indices for latent variables or constructs (boxes in Figures 1, 1a, and 2) that are general enough to be comparable across companies, industries, and sectors. These measures come from manifest or observed variables (survey questions) that are used as inputs to the model. Because of their generality, the latent variables and the relationships between them apply to government services, nonprofits, and competitive product and service markets alike.
2. ACSI is embedded in a system of structural or cause-and-effect relationships. This serves to validate the index from a nomological standpoint. Nomological validity, a form of construct validity, is the degree to which a construct behaves as it should within a system of related constructs called a nomological net (Bagozzi, 1980; Cronbach and Meehl, 1955). If the model predictions are supported (for instance, internally by future measurement or externally by changes in actual consumer behaviors), then the validity of ACSI is supported.
3. Consistent with its definition, satisfaction is measured as a latent variable (central box in Figures 1, 1a, and 2) using multiple manifest variables. Any one concrete measure of satisfaction, such as a single survey question, is at best a proxy or partial indicator

of the construct satisfaction (Simon, 1974). For this reason, ACSI uses several proxies that reflect satisfaction with the overall consumption experience. These proxies are combined into an index on a 0 to 100 scale to operationalize satisfaction.

4. One primary objective is to estimate the effect of ACSI on customer loyalty, a construct of universal importance in the evaluation of current and future business performance. Figure 1 shows the ACSI model used for the private sector, with an expanded version shown in Figure 1a. Figure 2 represents the model used for government services, a model that is also applicable to other nonprofits.

Figure 1. ACSI Model: Private Sector

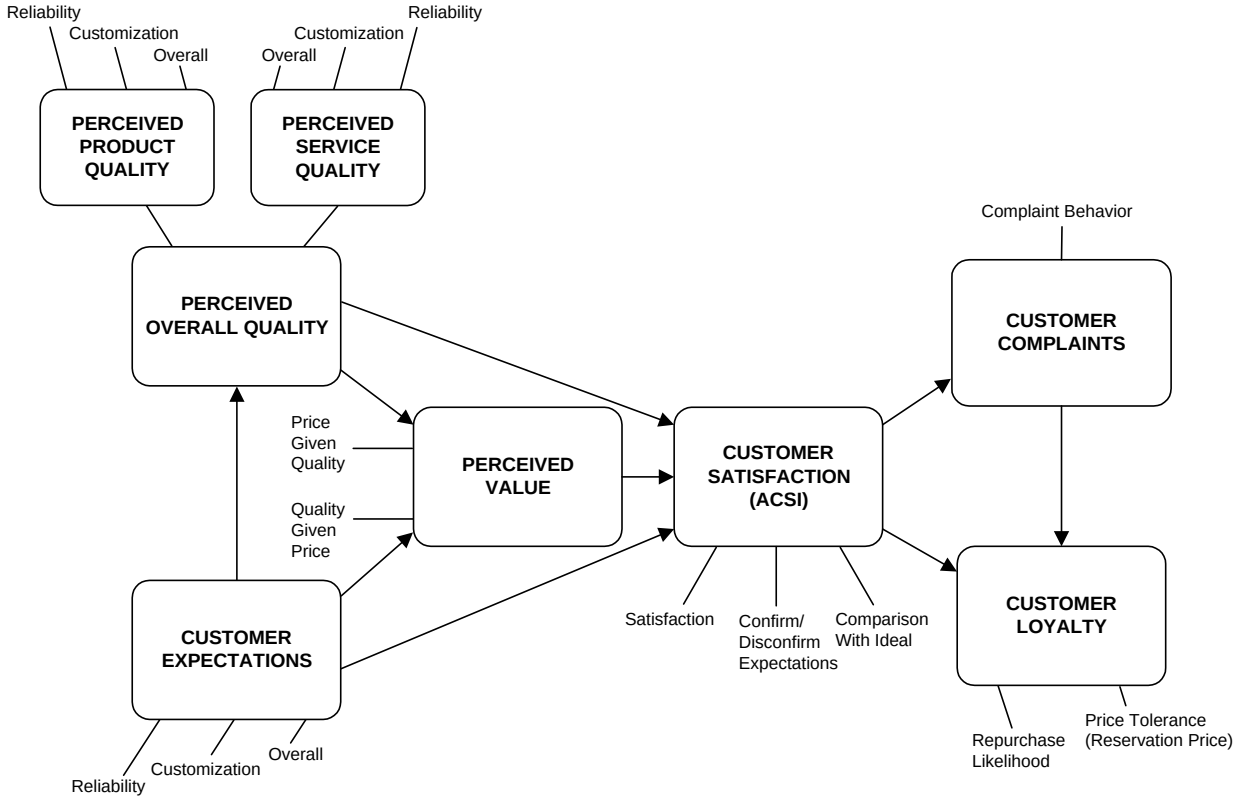


Expansion of the Model to Measure Product Quality and Service Quality as Inputs to Perceived Overall Quality

In some industries found in the Manufacturing/Durable Goods, Accommodation and Food Services, and Retail Trade sectors, a product and a service central to the consumption experience are both provided, but at different points in time. That is, there is an initial purchase of a product followed by a period of maintenance or service. In many instances, the service provider may not be the manufacturer itself. For most retailers, products are

manufactured by one company, but delivered by another. For these industries, ACSI uses the expanded model shown in Figure 1a.

Figure 1a. Expanded ACSI Model to Measure Product Quality and Service Quality as Inputs to Perceived Overall Quality

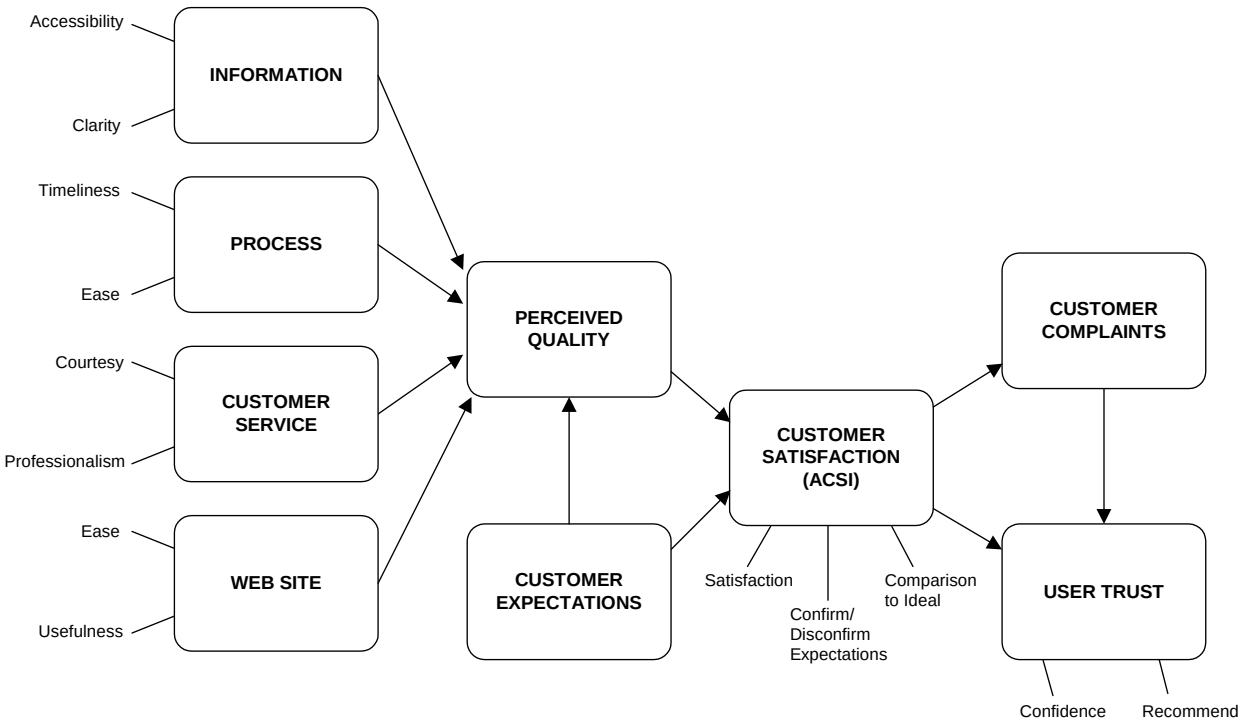


The Model for Government Services and Nonprofit Organizations

The ACSI research team has expanded the portfolio of measured organizations by adding customer segments of a large number of federal government agencies. Parts of the standardized ACSI model have been changed to accommodate such measurement. For instance, repurchase intention and price tolerance are not relevant for most federal government agencies as outcome measures. In many cases customers have no choice but to interact with a government agency, and most agencies do not deal in economic transactions in a strict sense. Likewise, perceived value in terms of price/quality relationships is not a driver of satisfaction, as there is usually no direct charge (or only a minimal one) for the services of these tax-supported organizations.

The most relevant outcome of customer satisfaction for a majority of federal agencies is user trust, for which the indicators are: (1) the degree to which the user/customer would recommend the agency's services to others (word-of-mouth recommendation); and (2) the extent to which the user has confidence in relying on the agency in the future (confidence). The antecedents, or drivers, of satisfaction vary more across government agencies than across companies in the private sector. This is because agencies provide a wider variety of services and customer interfaces. All government drivers, however, tend to fall into four broad categories: (1) information, (2) process, (3) Web site, and (4) customer service. Figure 2 shows the ACSI model for federal government services. The following latent variables (indices) in the model remain unchanged: customer expectations, perceived quality, customer satisfaction (ACSI), and customer complaints.

Figure 2. ACSI Model: Government Services and Nonprofit Organizations



2. The Customer Satisfaction Index (ACSI)

To estimate the customer satisfaction (ACSI) index, the ACSI modeling software weights the three manifest variables that comprise satisfaction. Customers' responses about a company or government agency are aggregated to produce its ACSI score. Thus, the

estimate is specific to each individually measured organization. The weighting of the ACSI score is affected by all latent and manifest variables in the system, as described later in this chapter (see Section D, "The ACSI Equations").

3. ACSI Antecedents (Drivers or Causes of Satisfaction)

Customer satisfaction (ACSI) has three antecedents in the standard (private sector) ACSI model: perceived quality, perceived value, and customer expectations. Perceived quality is hypothesized to have a direct, positive effect on satisfaction. This prediction is supported by a growing number of studies in marketing and consumer research literature (Fornell et al., 1996; Fornell et al., 2005; Yi, 1991). As a general psychological phenomenon, satisfaction is primarily a function of a customer's quality experience with a product or service (Churchill and Surprenant, 1982; Fornell, 1992; Tse and Wilton, 1988; Westbrook and Reilly, 1983). Quality experts (Deming, 1981; Juran and Gryna, 1988) delineate two primary components of the quality experience: (1) the degree to which a product or service provides key individual customer requirements (customization), and (2) how consistently and reliably these requirements are delivered over time (reliability).

The second determinant of customer satisfaction (ACSI) is perceived value, measured as the level of product or service quality experienced relative to the price paid. Adding perceived value incorporates price information into the model and increases the comparability of results across companies, industries, and sectors. Quality received per dollar expended, or value, is a common denominator that consumers use to compare brands and categories alike (Johnson, 1984). Using value perceptions to measure performance also controls for differences in income and budget constraints across individual respondents (Hauser and Shugan, 1983; Lancaster, 1971), which allows comparisons of very high-priced and very low-priced products and services. As with perceived quality, it is hypothesized that as value increases, customer satisfaction increases as well. Further, the differential impact of perceived quality and perceived value on customer satisfaction (ACSI) in the model provides important diagnostic information. As the impact of value increases relative to the impact of quality, price becomes a relatively more important determinant of satisfaction.

The third and final determinant of customer satisfaction is the level of quality customers expect to receive prior to their experience. Because expectations serve as an anchor in the consumer's evaluation process, expectations should, like quality and value, positively affect customer satisfaction (Oliver, 1980; Van Raaij, 1989). Expectations capture all of a customer's prior knowledge about (through word-of-mouth recommendation, advertising, etc.) and consumption experience with (through an earlier experience) a company's products

or services. Because each of these sources of information forecasts a company's ability to provide a positive customer experience, at least in the mind of the consumer, they should all have a positive effect on satisfaction. Customer expectations provide the anchor that is adjusted or updated in light of a customer's more recent experiences or what he or she has heard about the product or service.

Customer expectations also are hypothesized to be positively associated with both perceived quality and perceived value. These relationships capture a customer's ability to learn from experience and to predict, using this knowledge, the quality and value of a product or service (Howard, 1977). The size of these predictive relationships should vary with customer experience, as well as with factors such as the level of observation (individual customers versus markets), the nature of the information (price versus performance), and environmental changes (Johnson, Anderson, and Fornell, 1995).

As mentioned earlier, the antecedents of satisfaction used in the model for government services and nonprofit organizations excludes perceived value, but includes four additional determinants of quality and satisfaction (information, process, customer service, and Web site). All of these drivers are hypothesized to have a positive effect on perceived quality, and through quality, on customer satisfaction (ACSI).

4. ACSI Consequences (Outcomes of Satisfaction)

Drawing from Hirschman's (1970) exit-voice theory, the primary consequences or outcomes of improved customer satisfaction included in the ACSI model are decreased customer complaints and increased customer loyalty (Fornell and Wernerfelt, 1987 and 1988). When dissatisfied, customers have the option of exiting or defecting to an alternative supplier, or of voicing their dissatisfaction to their supplier in an attempt to receive some kind of recompense. Thus, an increase in satisfaction is hypothesized to be negatively related to complaints; that is, it will result in a decrease in the number of complaints received by a company (complaint rate). Conversely, increased satisfaction should improve the loyalty of customers. Customer loyalty is the ultimate dependent variable in the model because of its value in predicting customer retention and tolerance to price increases, and through these, in forecasting profitability.

The final relationship in the model is the effect of customer complaints on customer loyalty. The direction and size of this relationship measures, in large part, the effectiveness of a company's complaint-handling system (Fornell, 1992). When the relationship is positive, even if only slightly, then a company is successfully transforming complaining customers into loyal customers. When the relationship between complaints and loyalty is

negative, complaining customers are predisposed to defect, and an increase in complaints will cost the firm an increasing number of customers.

In the model for government services and nonprofit organizations, the measure of complaints is retained unchanged, but customer loyalty is replaced with an alternative latent variable appropriate to government, citizen trust. The nature of the hypothesized relationships between satisfaction, complaints, and citizen trust, however, remains the same.

5. Manifest Variables Used in the Model

Table 2 and Table 3 identify the manifest variables (questions) from the ACSI survey that are used in estimating the ACSI models and show which questionnaire items are included and used to operationalize each latent variable (represented by the boxes in the model diagrams). These are linked by numbers to the actual questions shown in Appendix D, *Customer Satisfaction Measurement Questionnaires—Private Sector and Government Services.*

Almost all of the questions in the ACSI survey are asked on a 1 to 10 rating scale, running from low/negative to high/positive. The surveys used as input to the model are described in Chapter IV, *Questionnaires*; Chapter V, *Household Survey Sample*; Chapter VI, *Data Collection Via Telephone;* and Chapter VII, *E-Business and E-Commerce Samples and Data Collection Via Internet.*

Table 2. Survey Questions Used in the ACSI Private Sector Model

Question Number*	Manifest Variable (Question) Description	Latent Variables (Indices)
1	Overall expectation of quality (pre-purchase)	Customer Expectations
2	Expectation regarding customization, or how well the product and service fits the customer's personal requirements (pre-purchase)	
3	Expectation regarding reliability, or how often things would go wrong (pre-purchase)	
4P	Overall evaluation of quality experience with product (post-purchase)	Perceived Product Quality
5P	Evaluation of customization experience, or how well the product fits the customer's personal requirements (post-purchase)	
6P	Evaluation of reliability experience, or how often things have gone wrong with product (post-purchase)	
4S**	Overall evaluation of quality experience with service (post-purchase)	Perceived Service Quality
5S**	Evaluation of customization experience, or how well the service fits the customer's personal requirements (post-purchase)	
6S**	Evaluation of reliability experience, or how often things have gone wrong with service (post-purchase)	
9	Rating of price given quality	Perceived Value
10	Rating of quality given price	
11	Overall satisfaction	Customer Satisfaction (ACSI)
12	Expectancy disconfirmation (performance that falls short of or exceeds expectations)	
13	Performance versus the customer's ideal product and service in the category	
14	Has the customer complained to the company within specified time period	Customer Complaints
15	Repurchase likelihood rating	Customer Loyalty
16	Price tolerance (increase) given repurchase	
17	Price tolerance (decrease) to induce repurchase	

*Questionnaires are shown in Appendix D.

**Used only in expanded model in Figure 1a. Note that Questions 7 and 8 are placeholders reserved for optional questions about product or service characteristics that are not used in the model.

Table 3. Survey Questions Used in the ACSI Model for Government Services and Nonprofit Organizations

Question Number	Manifest Variable (Question) Description	Latent Variables (Indices)
1	Overall expectation of quality of services (pre-experience)	Customer Expectations
2	Accessibility	Information
3	Clarity of information	
4	Timeliness of process	Process
5	Ease of process	
6	Courtesy	Customer Service
7	Professionalism	
8	Ease of use of Web site	Web Site
9	Usefulness of information on Web site	
10	Overall evaluation of quality experience with services (post-experience)	Perceived Quality
11	Overall satisfaction	Customer Satisfaction (ACSI)
12	Expectancy disconfirmation (performance that falls short of or exceeds expectations)	
13	Performance versus the user's ideal service in the category	
14	Has the user complained to the agency within specified time period	Customer Complaints
15	Confidence agency will do a good job in the future	User Trust
16	Willingness to recommend agency's services (if asked)	

The remainder of this chapter focuses mainly on the private sector ACSI model and the manifest variables included in it, although much of the discussion applies to the government services and nonprofit model as well.

Customer expectations are measured by asking customers to think back and recall the level of quality they expected to receive from a product or service based on their knowledge of and experience with the product or service (that is, "will" expectations as opposed to "should" expectations). Three questions capturing these expectations are asked of respondents: (1) overall expectations, (2) expectations regarding customization, and (3)

expectations regarding reliability. For practical reasons, only the overall expectations question is asked for the government services model.

Customers then rate their recent experience with the product or service using three measures of perceived quality: (1) overall perceived quality, (2) perceived customization, and (3) perceived reliability. Again, for practical reasons, only the overall perceived quality question is asked for the government services model. For some private sector industries, the three questions are repeated—once for the measure of product quality and a second time for the measure of service quality. Next, two questions tapping into perceived value are asked: (1) a rating of quality received relative to price paid, and (2) a rating of price paid relative to quality received.

As several authors have argued, there is no single standard for evaluating the construct customer satisfaction. Instead, satisfaction must be reflected in a variety of comparison standards (Cadotte, Woodruff, and Jenkins, 1987; Johnson and Fornell, 1991; Woodruff, Cadotte, and Jenkins, 1983). For this reason, customer satisfaction (ACSI) is operationalized in the ACSI model using three manifest variables (questions): (1) an overall, comprehensive rating of satisfaction with a product or service, (2) the degree to which a product's or service's performance falls short of or exceeds expectations (expectancy confirmation/disconfirmation), and (3) a rating of performance relative to the customer's ideal product or service in the category. These manifest variables are the same as those developed for the Swedish Customer Satisfaction Barometer (Fornell, 1992) to measure satisfaction as a latent variable, and are currently used in a variety of national and cultural contexts that have adopted the ACSI methodology. Each manifest variable is a qualitatively different standard that customers refer to throughout their purchase and consumption experience. As a latent variable, ACSI extracts shared variance or that portion of each rating that is common to all three manifest variables. Thus, satisfaction is not confounded by either performance or expectations. Only the psychological distance between performance and expectations, and between performance and the customer's imagined ideal, are used to measure satisfaction. All ACSI models use these same three manifest variables to measure satisfaction, facilitating comparison across product and service categories.

Customer complaints are measured, simply enough, as a "yes-no" question asking whether or not a customer has complained formally. The timeframe for complaint behavior is the same as the screening period that qualifies the respondent as a customer of a particular company and its products or services.

Finally, two variables measure customer loyalty for private sector companies: repurchase intention and price tolerance (reservation price). Repurchase intention is measured by asking the customer the likelihood that he or she will purchase from the same supplier the next time they purchase the same kind of product or service. Price tolerance is constructed from two survey questions: (1) how much a company could raise its price(s) as a percentage before the customer would definitely choose not to buy from that company on the next purchase occasion (given that the customer has indicated that he or she is likely to repurchase from the same company); and (2) how much a company would have to lower its price(s) as a percentage before the customer would definitely choose to buy from that company on the next purchase occasion (given that the customer has indicated that he or she is unlikely to repurchase from the same company). As mentioned previously, for the government services and nonprofit model, customer loyalty is replaced with an alternative latent variable appropriate to this context (user trust), which includes manifest variables tapping into confidence and advocacy.

C. INDEX PROPERTIES

In ACSI, customers are asked to evaluate products and services that they have purchased and consumed. A descriptive summary of what customers say in their responses to the questions defined as manifest variables in Tables 2 and 3 (for example, means, medians, percentage distributions, etc.) may have a certain simplistic appeal, but such an approach will fall short on any rigorous set of methodological criteria. For the index to be useful, it must meet statistical and technical standards appropriate to the objectives of ACSI. That is, if ACSI is to contribute to a more accurate and comprehensive measurement of economic output, predict economic returns, provide useful information for economic and government policy, and become an indicator of economic health, it must satisfy certain properties in measurement. These properties are: (1) precision, (2) validity, (3) reliability, (4) predictive power, (5) coverage, (6) simplicity, (7) diagnostics, and (8) comparability. The following sections examine each of these properties in turn.

1. Precision

Precision refers to the certainty about the recorded value of customer satisfaction (ACSI), as well as the other variables included in the ACSI model. Very high standards for precision are set, particularly at the national level, in order to detect changes from one period to the next. Results show that the 90% confidence interval (on a 0 to 100 scale) for the national customer satisfaction (ACSI) index is plus or minus 0.2 points. For each of the measured sectors, it is on average plus or minus 0.5 points. For industries, the confidence intervals are

on average plus or minus 1.0 point for manufacturing industries and 1.1 points for service industries. For the typical company, these intervals average plus or minus 2.0 points for manufacturing companies and 2.5 points for service companies and government services.

This level of precision is obtained as a result of considerable attention paid during data collection, careful manifest variable specification, and use of latent variable modeling. According to ACSI research, latent variable modeling (using weighted averages of multiple questions to produce the indices shown in the boxes in the models in Figures 1, 1a, and 2) produces an average improvement of 22% in precision over use of single-item variables.

2. Validity

Validity refers to the ability of the individual measures to represent the underlying latent variable (index) customer satisfaction (ACSI) and to relate effects and consequences in an expected manner. Discriminant validity, or the degree to which measured latent variables differ from other measured latent variables, also is evidenced in the ACSI model. For example, there is not only an important conceptual distinction between perceived quality and customer satisfaction, but there is an empirical distinction as well. That is, the covariance between the three manifest variables measuring ACSI is larger than the covariance between ACSI and any other latent variable in the system.

The nomological validity of the ACSI model can be examined by: (1) latent variable covariance accounted for by the model, and (2) the proportion of the variance of the latent variables explained in the model (R^2). On average, the structural model accounts for 94% of the latent variable covariance structure. The average R^2 of the customer satisfaction equation in the model is 0.75. In addition, all of the coefficients relating the latent variables to one another within the model have, in general, the expected sign. All but a few are, on average, statistically significant.

When dealing with measures of customer satisfaction, there are several threats to validity. The most serious of these is the skewness of the data's distribution. That is, in customer satisfaction measurement, respondents tend to disproportionately select the higher scores on the scale, resulting in non-normal left-skewed data. Skewness is addressed by using a fairly high number of scale categories (1–10) and by using a multiple-indicator approach (Fornell, 1992 and 1995). It is an established fact that validity typically increases with the use of more categories (Andrews, 1984), and it is particularly so when the respondent has good knowledge about the subject matter and when the distribution of responses is highly skewed. An index of satisfaction is much preferred over a categorization of respondents as either "satisfied" or "dissatisfied." Satisfaction is a matter of degree—it is not a binary concept. If

measured as a binary concept, precision is low, validity is suspect, and predictive power is poor.

3. Reliability

The reliability of a measure is determined by its signal-to-noise ratio. That is, reliability indicates the extent to which the variation of a measure is due to the "true" underlying phenomenon and not to random effects. High reliability is evident if a measure is stable over time or equivalent with identical measures; that is, if the measure "behaves as it should" (Fornell, 1992). Signal-to-noise in the items that make up the customer satisfaction (ACSI) index (in terms of variances) is about 4 to 1.

4. Predictive Power and Financial Implications of ACSI

An important aspect of the ACSI model is its ability to predict economic returns. The model includes two proxies for economic returns: (1) customer retention (estimated through a nonlinear transformation of the repurchase intention variable), and (2) price tolerance or reservation price. The manifest variables included in the customer satisfaction (ACSI) index are weighted in such a way that these proxies for economic returns and ACSI are maximally correlated (subject to certain constraints). Unless this kind of weighting is done, the index is more likely to include features that may be satisfying to the individual consumer, but for which he or she is not willing to pay.

A basic tenet underlying ACSI is that satisfied customers represent a real, albeit intangible, economic asset to a company. By definition, an economic asset generates future income streams to the owner of that asset. Therefore, if customer satisfaction is indeed an economic asset, it should be possible to use ACSI for prediction of company financial results. It is, of course, of considerable importance that the financial consequences of ACSI are specified and documented. If it can be shown that ACSI is related to financial returns, then the index has value.

To this end, faculty and doctoral students from around the world, as well as consultants and other researchers in the private sector, have done considerable research on the linkage between ACSI and economic returns, analyzing a variety of economic indicators in seeking a relationship between ACSI and financial returns. The pattern from all of these studies suggests a statistically strong and positive relationship between ACSI and economic performance. Specifically:

- There is a positive and significant relationship between ACSI and the market value of common equity. When controlling for accounting book values of total assets and liabilities, a five-unit gain (on the 0 to 100 scale used for ACSI) is associated with an average of 15% increase in market value. Also, there are significant and positive relationships between ACSI and market-to-book values and price/earnings ratios. There is a negative relationship between ACSI and risk measures, implying that companies with high loyalty and customer satisfaction have less variability and stronger financial positions.
- There is a strong relationship between levels of ACSI for companies and market value added (MVA). Analysis shows that a single point of satisfaction (on the 0 to 100 ACSI scale) is worth approximately $1.1 billion for a firm in MVA. Companies representing the top 25% in customer satisfaction measurement had average MVA of $41.5 billion, while those in the bottom 25% averaged only $12.2 billion (Fornell, 2007).
- There is a positive and significant relationship between ACSI and the long-term adjusted financial performance of companies. Tobin's *q* is generally accepted as the best measure of long-term performance. It is defined as the ratio of a company's present value of expected cash flows to the replacement costs of its assets. Controlling for other factors, ACSI has a significant relationship to Tobin's *q* (Mazvancheryl, Anderson, and Fornell, 2004).
- A relationship between ACSI and stock market performance of individual firms has been demonstrated using both back-tested and actual portfolios. This study showed higher returns with lower systematic risk for companies that perform well in ACSI (Fornell, Mithas, Morgeson, and Krishnan, 2005).
- At the macro level, lagged ACSI predicts S&P's 500 corporate earnings quite well. Recent findings also suggest a similarly strong relationship between changes in ACSI (lagged) and changes in consumer spending.
- The ACSI scores of approximately 130 publicly traded companies display a statistically positive relationship with the traditional performance measures used by companies and security analysts (that is, return-on-assets, return-on-equity, price-earnings ratio, and the market-to-book ratio).

In sum, all of this evidence indicates that the ACSI methodology produces a useful measure for customer satisfaction that is forward-looking, predictive of future success, and relevant to a company's and to the nation's economic performance.

5. Coverage

ACSI covers a substantial portion of the U.S. economy. In terms of total revenues, the companies in ACSI produce 50% of GDP. Given that ACSI measures only products and services sold to household consumers in the domestic market, the proportion of GDP actually measured drops to 41%. The economic sectors and industries covered are discussed in Chapter III. Within each industry, the number of companies measured varies from 2 to 30. (See Appendix A, *Companies and Government Services Evaluated by Customers in ACSI.)*

The national index and the indices for each industry and sector are reflective of the total value (quality times sales) of products and services provided by companies at each respective level of aggregation. Revenues relative to the industry total are used to determine each company's contribution to its respective industry index. In turn, relative revenues by each industry are used to determine each industry's contribution to its respective sector index. To calculate the national index, the percentage contributions of each sector to GDP are used to top-weight the sector indices. Mathematically, this is defined as:

$$\text{Index for Industry } i \text{ in Sector } s \text{ at time } t = I_{ist} = \sum_{f}^{F} \frac{S_{fist} I_{fist}}{\sum_{f}^{F} S_{fist}}$$

$$\text{Index for Sector } s \text{ at time } t = I_{st} = \sum_{i}^{I} \frac{S_{ist} I_{ist}}{\sum_{i}^{I} S_{ist}}$$

where

S_{fist} = Sales by firm f, industry i, sector s at time t

I_{fist} = Index for firm f, industry i, sector s at time t

and

$$S_{ist} = \sum_{f}^{F} S_{fist} = \text{Total Sales for Industry } i \text{ at time } t$$

$$S_{st} = \sum_{i}^{I} S_{ist} = \text{Total Sales for Sector } s \text{ at time } t$$

ACSI is updated on a quarterly basis. During each quarter, new indices are estimated for one or more sectors of the economy, with total replacement of all data (industries and

sectors) annually. The national index is comprised of the most recent estimate for each sector, defined mathematically as:

$$\text{National Index at time } t = I_t = \sum_{t=T-3}^{T} \sum_{s}^{S} \frac{S_{st} I_{st}}{\sum_{t=T-3}^{T} \sum_{s}^{S} S_{st}}$$

where $I_{st} = 0$ for all t in which the index for a sector is not estimated, and $I_{st} = I_{st}$ for all quarters in which an index is estimated. In this way, the national index represents company, industry, and sector indices for the prior year.

6. Simplicity

Given the complexity of model estimation, ACSI maintains reasonable simplicity. All of the latent variables are calibrated on a 0 to 100 scale. While the absolute values of ACSI are of interest, much of the index's value, as with most other economic indicators, is found in changes over time, which can be expressed as percentages.

7. Diagnostics

As illustrated in the model specification graphics in Figures 1, 1a, and 2, the ACSI model estimates the relationships between customer satisfaction and its antecedents as seen by the customer (customer expectations, perceived quality, and perceived value). Also estimated are the relationships between ACSI, customer loyalty (as measured by customer retention and price tolerance), and customer complaints. ACSI generates information about levels of satisfaction, expectations, and so forth, as well as the antecedents (causes) and consequences (outcomes) of satisfaction. For example, it is possible to estimate the impact of product and service reliability, the effect of increased customization (fitness for use), the role of expectations, and the expected economic return-on-investment in customer satisfaction as the result of improved customer retention.

There are, however, certain limitations with respect to diagnostics. Cassell (1993) reports on the advantages of the approach chosen in ACSI to measure satisfaction at the corporate rather than the leading-brand level in terms of unbiased estimates. This refers to the manifest and latent variables, but not necessarily to the coefficients that relate the index to causes and consequences. For the coefficients to be unbiased and consistent, the standard statistical assumptions apply. Further, it is not realistic to believe that all diagnostics are

equally useful. For companies selling many different products to different markets, it is obvious that any set of diagnostics that do not relate to specific brands are of limited value.

8. Comparability

A fundamental question is whether or not it is possible to compare the satisfaction levels (ACSI scores) of different customers, companies, industries, and sectors. As evident from welfare economics, any interpersonal comparison of utility is complicated, to say the least. In ACSI, as in any measurement that relies on survey data, there is no way to be certain that the questionnaire scales have the same meaning to each respondent. The ACSI methodology addresses this difficulty by treating customer satisfaction as a latent (unobservable) construct at a higher level of abstraction—a level where there is a basis for comparing things that are fundamentally different (Johnson and Fornell, 1991). This is not to suggest that such comparisons are without error. By using this method, however, the error is reasonably small relative to what is gained. ACSI meets a reasonable criterion of comparability (across individuals, companies, etc.). "Objective" factors such as degree of industry concentration and heterogeneity in demand and supply can account for the variation in the index. Results show that much of this variation across industries and sectors is, in fact, accounted for by variables of industrial organization.

A further discussion of ACSI and results in its 1994 baseline year is given in Fornell, Johnson, Anderson, Cha, and Bryant (1996). A ten-year history of ACSI is described in *The American Customer Satisfaction Index at Ten Years: ACSI 1994-2004, A Summary of Findings: Implications for the Economy, Stock Returns and Management* (Fornell, VanAmburg, Morgeson, Anderson, Bryant, and Johnson, 2005). Scores for companies and government services across all years of measurement are updated quarterly on the Web site: *www.theacsi.org*.

D. THE ACSI EQUATIONS

The formal expression of the model depicted in Figure 1 can be written as a series of equations estimated by partial least squares (PLS). The systematic part of the predictor relationships is the conditional expectation of predictands for given values of predictors. The general equation is thus specified as stochastic:

$$E[\eta \mid \eta, \xi] = \mathrm{B}\eta + \Gamma\xi$$

where $\boldsymbol{\eta}' = (\eta_1, \eta_2, ..., \eta_m)$ and $\boldsymbol{\xi}' = (\xi_1, \xi_2, ..., \xi_n)$ are vectors of unobserved endogenous and exogenous variables, respectively; $\mathbf{B}$ (m × m) is a matrix of coefficient parameters for $\boldsymbol{\eta}$; and $\boldsymbol{\Gamma}$ (m × n) is a matrix of coefficient parameters for $\boldsymbol{\xi}$. This implies that $E[\boldsymbol{\eta}\boldsymbol{\zeta}'] = E[\boldsymbol{\xi}\boldsymbol{\zeta}'] = E[\boldsymbol{\zeta}] = 0$, where $\boldsymbol{\zeta} = \boldsymbol{\eta} - E[\boldsymbol{\eta}|\boldsymbol{\eta}, \boldsymbol{\xi}]$.

The equation that relates the latent variables in the model shown in Figure 1 is:

$$\begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \\ \eta_5 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 \\ \beta_{21} & 0 & 0 & 0 & 0 \\ \beta_{31} & \beta_{32} & 0 & 0 & 0 \\ 0 & 0 & \beta_{43} & 0 & 0 \\ 0 & 0 & \beta_{53} & \beta_{54} & 0 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \\ \eta_5 \end{bmatrix} + \begin{bmatrix} \gamma_{11} & \alpha_1 \\ \gamma_{21} & \alpha_2 \\ \gamma_{31} & \alpha_3 \\ 0 & \alpha_4 \\ 0 & \alpha_5 \end{bmatrix} \begin{bmatrix} \xi_1 \end{bmatrix} + \begin{bmatrix} \zeta_1 \\ \zeta_2 \\ \zeta_3 \\ \zeta_4 \\ \zeta_5 \end{bmatrix}$$

where

ξ = Customer Expectations
η_1 = Perceived Quality
η_2 = Perceived Value
η_3 = Customer Satisfaction (ACSI)
η_4 = Customer Complaints
η_5 = Customer Loyalty

The general equations for relating the latent variables to empirical variables are:

$$\mathbf{y} = \boldsymbol{\Lambda}_\mathbf{y}\boldsymbol{\eta} + \boldsymbol{\varepsilon}$$

$$\mathbf{x} = \boldsymbol{\Lambda}_\mathbf{x}\boldsymbol{\xi} + \boldsymbol{\delta}$$

where $\mathbf{y}' = (y_1, y_2, ..., y_p)$ and $\mathbf{x}' = (x_1, x_2, ..., x_q)$ are the measured endogenous and exogenous variables, respectively. $\boldsymbol{\Lambda}_\mathbf{y}$ (p × m) and $\boldsymbol{\Lambda}_\mathbf{x}$ (q × n) are the corresponding regression coefficient matrices. By implication from PLS estimation (Fornell and Bookstein, 1982), we have $E[\boldsymbol{\varepsilon}] = E[\boldsymbol{\delta}] = E[\boldsymbol{\eta}\boldsymbol{\varepsilon}'] = E[\boldsymbol{\xi}\boldsymbol{\delta}'] = 0$. The corresponding equations in the model are:

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} \lambda_{11} \\ \lambda_{21} \\ \lambda_{31} \end{bmatrix} \xi + \begin{bmatrix} \delta_1 \\ \delta_2 \\ \delta_3 \end{bmatrix}$$

and

$$\begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \\ y_5 \\ y_6 \\ y_7 \\ y_8 \\ y_9 \\ y_{10} \\ y_{11} \end{bmatrix} = \begin{bmatrix} \lambda_{11} & 0 & 0 & 0 & 0 \\ \lambda_{21} & 0 & 0 & 0 & 0 \\ \lambda_{31} & 0 & 0 & 0 & 0 \\ 0 & \lambda_{12} & 0 & 0 & 0 \\ 0 & \lambda_{22} & 0 & 0 & 0 \\ 0 & 0 & \lambda_{13} & 0 & 0 \\ 0 & 0 & \lambda_{23} & 0 & 0 \\ 0 & 0 & \lambda_{33} & 0 & 0 \\ 0 & 0 & 0 & \lambda_{14} & 0 \\ 0 & 0 & 0 & 0 & \lambda_{15} \\ 0 & 0 & 0 & 0 & \lambda_{25} \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \\ \eta_5 \end{bmatrix} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \\ \varepsilon_4 \\ \varepsilon_5 \\ \varepsilon_6 \\ \varepsilon_7 \\ \varepsilon_8 \\ \varepsilon_9 \\ \varepsilon_{10} \\ \varepsilon_{11} \end{bmatrix}$$

where:

x_1 = Customer Expectations About Overall Quality
x_2 = Customer Expectations About Reliability
x_3 = Customer Expectations About Customization
y_1 = Overall Quality
y_2 = Reliability
y_3 = Customization
y_4 = Price Given Quality
y_5 = Quality Given Price
y_6 = Overall Satisfaction
y_7 = Confirmation of Expectations
y_8 = Distance to Ideal Product (Service)
y_9 = Formal or Informal Complaint Behavior
y_{10} = Repurchase Intention
y_{11} = Price Tolerance (Reservation Price)

E. THE ACSI FORMULA

The general form of ACSI is as follows:

$$ACSI = \frac{E[\xi] - Min[\xi]}{Max[\xi] - Min[\xi]} \times 100$$

where ξ is the latent variable for customer satisfaction (ACSI) and $E[.]$, $Min[.]$, and $Max[.]$ denote the expected, the minimum, and the maximum value of the variable, respectively.

The minimum and the maximum values are determined by those of the corresponding manifest variables

$$Min[\xi] = \sum_{i=1}^{n} w_i \; Min[x_i]$$

and

$$Max[\xi] = \sum_{i=1}^{n} w_i \; Max[x_i]$$

where x_i's are the manifest variables of the latent variable customer satisfaction, w_i's are the weights, and n is the number of measurement variables. In calculating ACSI, unstandardized weights must be used if unstandardized measurement variables are used.

In ACSI, there are three indicators for customer satisfaction that range from 1 to 10. The calculation is then simplified to:

$$ACSI = \frac{\sum_{i=1}^{3} w_i \bar{x}_i - \sum_{i=1}^{3} w_i}{9\sum_{i=1}^{3} w_i} \times 100$$

where w_i's are the unstandardized weights.

III. SELECTION OF ECONOMIC SECTORS, INDUSTRIES, COMPANIES, AND GOVERNMENT SERVICES

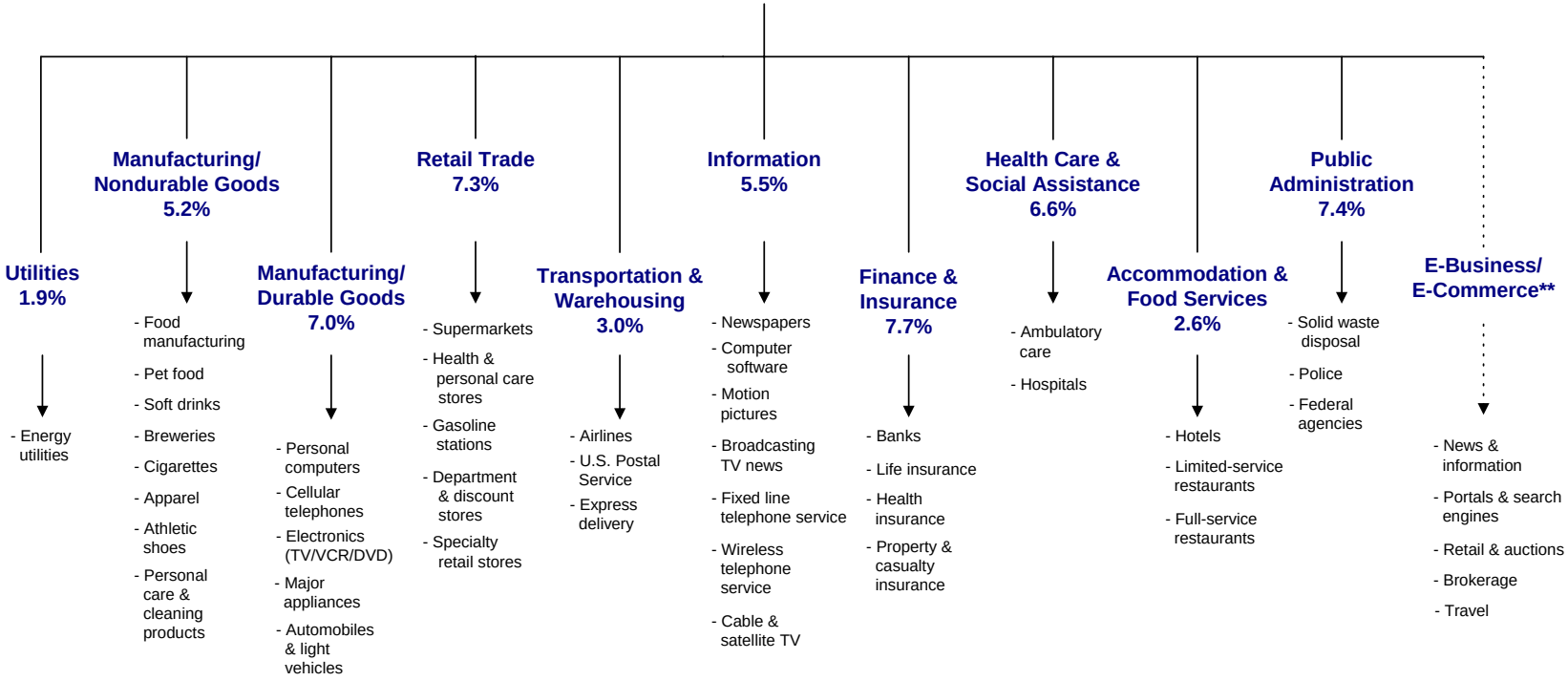
The selection of sectors, industries, companies, and government services is premised on obtaining a representation of the U.S. economy that provides goods and services to households by measuring companies with total sales which represent a significant proportion of the GDP. In addition to U.S.-based companies that produce the nation's GDP, ACSI includes goods and services produced by foreign companies with major U.S. market shares. For reasons of both efficiency and precision, analysis is at the aggregate company level, rather than at the product or brand level (Cassel, 1993). The ACSI score for an individual company thus reflects the proportional mix of its product and service offerings. For government, analysis is at the level of certain services provided to specific segments of the population.

ACSI includes ten sectors of the economy that sell to household consumers: (1) Utilities, (2) Manufacturing/Nondurable Goods, (3) Manufacturing/Durable Goods, (4) Retail Trade, (5) Transportation and Warehousing, (6) Information, (7) Finance and Insurance, (8) Health Care and Social Assistance, (9) Accommodation and Food Services, and (10) Public Administration. Additionally, ACSI measures two Internet-based groups of industries whose companies are included in the prior sectors: e-business and e-commerce.

Government spending accounts for approximately 11% of GDP. ACSI includes federal and local, but not state government. Local government is represented in ACSI by two services that reach most of the public: solid waste disposal and police. Figure 3 shows the sectors and industries measured in ACSI.

Figure 3.

The ACSI: National Economy, Sectors, and Industries*



*The percentage shown is the contribution of each sector to the GDP.
E-Business / E-Commerce is a portion of other sectors.

IV. QUESTIONNAIRES

A. SCREENING QUESTIONNAIRES

There are multiple versions of questionnaires to screen respondents (for information about selection of respondents, see Chapter V, *Household Survey Sample*). Different versions of screening questionnaires are employed because product usage is determined specifically; relevant time periods for purchase/usage vary; and all brand names must be linked to parent companies. Table 4 shows the relevant time periods for qualifying customers.

Table 4. Time Periods for Purchase and Use to Qualify as Customer (All purchases must be new, not used)

Currently

- Have active checking account, savings account, or bank loan at a bank in own name.
- Have life, homeowner's, automobile, property/casualty, or health insurance in own name.
- Have garbage and trash collection (solid waste disposal) provided by local government (asked only of those living in metropolitan areas).
- Have telephone service in home or cellular service.
- Subscribe to cable or satellite TV service.
- Used an Internet service provider (ISP) to connect to the Internet.
- Have electric or natural gas service in home.

Within past week

- Read a newspaper that was subscribed to or purchased.

Within past month

- Purchased and consumed food (five categories).
- Purchased and smoked cigarettes (asked only if 21 or older).
- Purchased and consumed beer (asked only if 21 or older).
- Purchased and consumed soft drinks or pop.
- Own a dog or cat and purchased pet food.
- Watched a national network or cable TV news program.

Within past three months

- Purchased food or drinks from a coffee shop or fast food restaurant, or ordered pizza for carry out or delivery.
- Purchased gasoline for own automobile.
- Shopped for groceries at a supermarket or other store.
- Purchased personal care or cleaning products (five categories).
- Shopped at a drugstore or pharmacy chain.

- Have a full-service brokerage account and made a financial transaction on the Internet.
- Purchased merchandise from an Internet retail or auction site.
- Accessed a news and information site on the Internet.

Within past six months

- Shopped for merchandise (not groceries) at a department or discount store.
- Shopped at a warehouse club or store that specializes in selling only certain products or goods.
- Dined at a full-service restaurant.
- Used a parcel delivery, overnight, or two-day mail delivery service for sending a letter, a document, or a package.
- Visited a U.S. Post Office to buy stamps, pick up mail, or use any of the counter services.
- Made a travel reservation through an Internet travel site.

Within past year

- Flew on a scheduled airline.
- Stayed overnight at a hotel or motel for business or pleasure.
- Went to a movie theater, rented or purchased a videotape or DVD, or watched a movie on pay-per-view.
- Purchased apparel (multiple categories) or athletic shoes.
- Had experience with any U.S. federal government agency (broad definition of experience including looking at Web site, talking with personnel by phone or in person, receiving printed materials or brochures, visiting a site or office, or receiving a check or benefit).
- Had an office visit with a healthcare professional.
- Purchased new computer software for home computer (not including home gaming systems).

Within past two years

- Purchased a new cellular phone.

Within past three years

- Purchased a new personal computer for home.
- Purchased a new television or VCR/DVD player.
- Purchased a new major appliance such as washer, dryer, stove, refrigerator, or dishwasher.
- Used hospital services (includes parents using services for their child).
- Had contact with local police (asked only of those living in metropolitan areas).

More than six months, but within three years

- Purchased or personally leased a new automobile, van, SUV, or light truck.

For examples of the screening questionnaires for the personal computer industry and for the supermarket industry, see Appendix C, *Example Screening Questionnaires and Brand/Company Identification.*

B. BRAND/COMPANY IDENTIFICATION

Because customers often respond with a brand name rather than a company name when asked about the purchase of goods or services, all of the brands produced by the companies measured in ACSI are programmed into the computer-assisted-telephone-interviewing (CATI) system. For many industries, customers may respond with a subsidiary name rather than a parent company name (as with brand names, the CATI system links all subsidiary names to parent companies). For a description of how brand and subsidiary names are linked with company names, see Chapter VI, *Data Collection via Telephone*.

Highlighting and entering the brand in the CATI system automatically designates the interview by company name, although the brand name appears on the interview screen for all questions asked of the respondent. Examples of the brand and subsidiary lists for the personal computer and supermarket industries are shown in Appendix C.

If the respondent answers with a brand name for a company not measured, the response is coded under the "all others" category. The respondent is not administered the complete questionnaire for the particular product, but only the three questions used in the ACSI score.

C. QUESTIONNAIRE

The satisfaction questionnaire items are shown in Chapter II, Table 2 and Table 3. These items are the product of multiyear empirical testing in the United States. The private sector questionnaire has had few modifications since the first wave of measurement in 1994. The examples used in questionnaires are tailored to be relevant to each industry, but the basic question format is constant across all industries. The generic questionnaires for interviews for the private sector and government services are shown in Appendix D.

The number of substantive questions used in the ACSI models are as follows: 15 for Figure 1 (private sector model), 18 for Figure 1a (expanded model), and 16 for Figure 2 (government services model). Respondents also are asked six demographic questions and, on occasion, optional questions that are not used for modeling. Identification of the respondent's geographic location is coded from the sample. The substantive contents of the questions are as follows:

Questions Used for Private Sector Models (Figures 1 and 1a)

- Three questions on customer's expectations before purchase/use of products/services.
- Three questions on customer's perceived quality based on actual experience with products/services (overall quality, customization, reliability). (These are expanded to six questions for the model in Figure 1a.)
- Two questions on perceived value—price given quality and quality given price.
- One question on overall satisfaction with products/services.
- One question on products/services exceeding or falling short of expectations.
- One question on comparison with ideal products/services.
- One question on complaints.
- One question on repurchase likelihood.
- Two questions on price tolerance.

ACSI is comparable across industries, as the questions are the same for each. Examples that the interviewers provide to illustrate quality, customization, and reliability are customized by industry to make these questions relevant to the specific product or service.

Questions Used for Government Services and Nonprofit Organization Model (Figure 2)

- One question on user's expectations before use of services.
- Eight questions rating four activities that drive perceptions of quality: information, process, customer service, and Web site.
- One question on user's perceived quality based on actual experience with services.
- One question on overall satisfaction with services.
- One question on services exceeding or falling short of expectations.
- One question on comparison with ideal services.
- One question on complaints.
- Two questions on user trust: confidence in agency doing good job in future and willingness to recommend agency.

V. HOUSEHOLD SURVEY SAMPLE

A. HOUSEHOLD SAMPLE AND TELEPHONE NUMBER SELECTION

This chapter discusses the random selection of adults and the identification of customers of specific products and services in households.

1. Selection of Household Numbers for Screening

The universe from which the sample is drawn for private sector companies and government agencies is households with telephones in the continental United States. Numbers to be dialed are selected using Genesys CSS, the sample design and generation system offered by Marketing Systems Group (Marketing Systems Group, 2004).

Interviewing is done quarterly, with data collected for one or more of the ten measured economic sectors each quarter. Regional samples are selected and screened for customers of companies that have regional markets (for example, energy utilities and cable television service).

Creation of the Random-Digit Database

A modified Epsem (equal probability of selection method) is used to select numbers to be dialed. Replicate samples are screened successively to maintain national (or regional) representation for companies with both high and low incidence of purchase. The same RDD method is used for national replicates and for the targeted regional RDD samples. RDD includes listed and unlisted telephones.

Samples are generated using a database of "working blocks," prescreened to remove identifiable nonresidential numbers. A *block* (also known as a *100-bank* or a *bank*) is a set of 100 contiguous numbers identified by the first two digits of the last four digits of a telephone number. For example, in the telephone number 255-4200, "42" is the block, and 4200-4299 are the numbers in it. A block is termed to be *working* if one or more listed telephone numbers are found in that block.

Each exchange is assigned to a single county. Nationally, about 72% of all exchanges appear to fall totally within single-county boundaries. For those overlapping county and/or state lines, the exchanges are assigned to the county of plurality or the county with the highest number of listed residents within the exchange. This assignment prevents overrepresentation of these exchanges.

Sample Stratification

Samples are generated using stratified sampling procedures. A separate sample is selected from the sampling units in each stratum. The database used has been stratified by county.

Prior to sample selection, the sample is allocated proportionally across all strata in the defined geography using several frame adjustment options. The sampling frame determines the way a sample is distributed across geography at the county level.

The sample is distributed by county in proportion to the total active blocks (with one or more listed numbers) in the exchanges assigned to that county. Rather than being an estimate of target population, all frame units are represented with equal probability across counties. Active blocks in each exchange are counted with each database update. The number of active blocks in an exchange is multiplied by 100 (the number of possible ten-digit telephone numbers in a block) to calculate the total possible phone numbers. Sample is allocated to each county in proportion to its share of these possible ten-digit telephone numbers.

Sample Selection

After the sample has been allocated, sample selection is made. Samples of random numbers are systematically selected with equal probability across all eligible blocks. All blocks within a county are organized in ascending order by area code, exchange, and block number.

Once the quota has been allocated to all counties in the frame, a sampling interval is calculated for each county by summing all the eligible blocks in the county and dividing that sum by the number of sampling points assigned to the county. From a random start between zero and the sampling interval, blocks are systematically selected from each county. Once a block has been selected, a two-digit random number in the range of 00 to 99 is appended to the exchange and block to form a ten-digit telephone number.

Telephone numbers selected for use are marked on the database to protect against reuse in the same calendar year.

Dual-Sample Frame for Manufacturing/Durable Goods

Currently, a dual-sample frame is used for the Manufacturing/Durable Goods sector. This is because of the enormous number of households that need to be screened to identify and interview purchasers (within the last three years) of companies with low market shares in the automobile and light vehicle industry. The dual frame consists of both RDD national

samples, as used for the other sectors of the economy, and purchased lists of automotive vehicle owners.[3] The vehicle owners also are eligible to be screened for purchase and use of other products and services measured in ACSI.

Throughout interviewing for the Manufacturing/Durable Goods sector, the sample from each frame is monitored for demographic characteristics to ensure that similar types of customers are interviewed in each frame.

2. Household Sample Size

There is no fixed sample size for initial screening of households. There is a quota of 250 customer interviews per company and 1,500 for federal agencies combined. For only a few companies and services with low incidence, fewer than 250 interviews may be completed.

3. Callbacks and Household Substitution

If the household is not reached on the initial call, three callbacks are made on different days at different time periods. If no contact is made after this total of four attempts, a substitute number is selected and the process is repeated. All telephone interviewing is conducted from 5 p.m. to 9 p.m. local time, Monday through Friday; 9 a.m. to 9 p.m. Saturday; and 10 a.m. to 9 p.m. on Sunday. Scheduled callbacks can be completed from 8 a.m. to 9 p.m. local time, upon request from the respondent.

B. SELECTION OF DESIGNATED RESPONDENT WITHIN HOUSEHOLD

Eligible respondents for screening are defined as adults 18 or over, with the exception of the brewery (beer) and cigarette industries, where only those 21 and older are eligible. The adult to be interviewed is selected randomly by asking for the adult with the most recent birthday. No substitution of respondent within the household is allowed. If that respondent is unreachable or unwilling, a new household is dialed.

C. SCREENING HOUSEHOLD RESPONDENTS TO IDENTIFY QUALIFIED CUSTOMERS

The designated respondent is qualified as a customer using questions about the purchase of products and services within specified time periods for up to ten industries. No single

[3]Lists of licensed vehicle registrations from the 37 states from which such information is available (plus the District of Columbia) are purchased from R.L. Polk (Southfield, Michigan).

respondent is interviewed about more than three companies (none of which are competing in the same industry or product category).

Once a respondent qualifies as the customer of three measured companies, screening is discontinued. If the respondent qualifies for one or two out of ten, he or she is interviewed about the products or services of these companies. If the respondent does not qualify as a customer for three measured companies, but has purchased goods or services from another company within the industries for which he or she was screened, the respondent is asked three satisfaction questions about that company. These interviews are aggregated within each industry as "all others." Qualification as a customer is based on purchase/usage during the time periods shown in Chapter IV, Table 4, and the questions shown in Appendix B, *ACSI Industry Definitions and Customer Identification*.

There are multiple screening questionnaires to cover the measured industries. If more than ten industries are measured during the quarterly field interviewing period, ten are selected to start. As the quota of interviews for an industry is filled, the screening questionnaire for that industry is dropped and one for another industry is added. Once the number of companies for which the respondent qualifies is determined, the interviewer then proceeds with the customer satisfaction questionnaire for each of these.

Standard errors and confidence intervals for companies are based on the completed sample size. Because all latent constructs used in the ACSI model are weighted averages of multiple questions, the final measures have more precision than single questions have with these sample sizes (see Chapter II, Section C-1, "Precision").

D. INTERVIEW RESULTS: RESPONSE AND COOPERATION RATES

In the year from the fourth quarter of 2006 through the third quarter of 2007, ACSI telephone interviewers completed 57,739 interviews with 35,698 customer respondents (an average of 1.6 company interviews per respondent).

To standardize the reporting of random-digit-dial telephone survey results, the American Association of Public Opinion Research (AAPOR) has produced *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys* (American Association of Public Opinion Research, 2008).

The ACSI methodology is unusual among surveys for several reasons. First, the design calls for four attempts (initial call and three callbacks at different times of day and on different days) on each sampled phone number rather than an unlimited number of calls.

Second, a randomly selected adult in the household is then screened to determine if he/she has been the customer of specific companies within specific time periods. Many potential respondents do not qualify as customers within these definitions. Third, interviews for any company are discontinued once a quota of 250 interviews is completed. This means that many attempted interviews (62,349) on which one, two, or three calls have been made were not pursued to completion. Call results, therefore, do not closely fit AAPOR categories. Appendix E, *Response and Cooperation Rates* reports the disposition of each of the sampled telephone numbers that produced the interviews.

Using AAPOR standards, the Cooperation Rate is an excellent 91.6% and the Response Rate (RR3) is 24.3%. The calculations of these are shown in Appendix E.

E. PROFILE OF INTERVIEWED CUSTOMERS

Appendix F gives a demographic profile of interviewed customers. The sample, screened to purchasing adults in telephone households,[4] has expected differences from all adults in telephone households in the direction of having higher socioeconomic characteristics of education and income and less representation of non-whites. The higher proportion of females (62% *versus* 51% in the total population) is partially attributable to the mix of companies measured in ACSI. Many of these produce household and food products purchased disproportionately by women.

[4]According to the National Health Interview Survey (CDC/National Center for Health Statistics, 2008), by late 2007 an estimated 15.8% of households did not have a landline telephone, but did have one or more cellular telephones. ACSI and Market Strategies International researchers ran a test with samples of cell phone and landline phone respondents to see if the two samples produced different ACSI scores for two companies (Bryant et al., 2008). The differences were not significant. Users of the two phone types will be monitored again in future years.

VI. DATA COLLECTION VIA TELEPHONE

The National Quality Research Center, Ross School of Business, works closely with its telephone sampling and interviewing sources (currently Market Strategies International) to fulfill the unusual interviewing requirements called for by the ACSI sampling design described in the previous chapter.[5] The interviewing requirements are unusual because of the need to screen households to identify customers of about 200 companies, as well as users of specific government agencies, and to maintain nationally (or regionally) representative samples of the customers. Both industries and companies have greatly varying incidence of usage in U.S. households. This incidence ranges from 100% use of the U.S. Postal Service to a far lower percentage of adults who have stayed within the past year at one of several hotel chains with low household penetration and market share.

Most respondents in ACSI are identified by telephone screening. This screening is made more complex because many customers respond with brand names or subsidiary/ divisional names of companies rather than with parent company names. A further complexity is that a qualified respondent can be a customer for a product or service from more than one industry, and is thus eligible for interview about more than one company (up to a maximum of three).

To accommodate these requirements, the computer-assisted-telephone-interviewing (CATI) system and the database created during interviewing are programmed and designed to have the following capabilities:

1. Assign multiple screening questionnaires and multiple company interview questionnaires to each designated respondent.

   - A respondent is administered only a portion of possible screening questionnaires (maximum ten). As interviews for each industry are completed, the screening questionnaire for another industry is added.
   - A respondent is eligible for interviews in a maximum of three industries, but only for one company within any industry. He or she may not be interviewed more than once for the same company if it is measured in another industry.
   - The quota of company interviews for some industries in the Manufacturing/ Nondurable Goods sector can be filled by multiple products from multiple screenings. For example, both General Mills and Sara Lee Corporation have products in several

[5]As a public university, The University of Michigan periodically issues competitive bid requests for sampling and interviewing.

categories in the food manufacturing industry and the Colgate-Palmolive Company has products in several categories in the personal care and cleaning products industry.

- A respondent who does not qualify as a customer of one of the measured companies, but has purchased or used the products or services for which screened from another company, can be administered the three ACSI satisfaction questions about the "other company" (if this respondent has not already been interviewed for a maximum of three companies).
- Demographic questions are asked of a responding customer only once, but can be linked to each company interview that the customer completes.

2. Fill interview quotas for low-incidence companies.
   - Screen respondents for use of products or services of industries with varying incidence of use.
   - Identify respondent purchases from specific companies with varying market shares.
   - Within industries, if a respondent is a customer for products or services from more than one company, select the company with the lowest market share as the subject of the interview.
3. Associate product, brand, and subsidiary names with parent companies.
   - A specialized database includes all identifiable brand names and subsidiaries of each measured company. This database is incorporated in the CATI program for ACSI. Names associated with the companies in each industry come up on the screen for interviewer use (see examples for the personal computer and supermarket industries in Appendix C, *Example Screening Questionnaires and Brand/Company Identification*). Over 5,000 brand and subsidiary names are in the database, which is updated every quarter. The brand database was initialized using the *Brands and Their Companies* database of Gale Research, Inc. (Southfield, Michigan). It is updated at the start of each interviewing period by checking the Web pages of measured companies and by using sources such as business media reports on acquisitions and mergers and company annual reports.
   - The program allows the customer being interviewed to identify to the interviewer which product or brand he or she purchased, and the brand database associates the brand with the parent company.

- The program inserts the name of the brand or subsidiary identified by the responding customer into the company interview questionnaire so that the linkage is transparent to the customer who is then interviewed using the specific brand or subsidiary name.

4. Monitor representativeness of sample for each industry throughout interviewing period.

   - Demographics are tracked and reviewed weekly throughout the field interviewing period. Because both list and random-digit-dial (RDD) samples are used for the Manufacturing/Durable Goods sector, demographics of each sample are tracked separately and in combination. Interviewing is switched over to RDD only if the list sample shows beyond expected deviations from the demographics of the RDD sample.

Interviews for the baseline 1994 American Customer Satisfaction Index were conducted simultaneously for all sectors, industries, and companies between May 10 and July 22, 1994. Since then, interviews have been conducted quarterly for one or more sectors per quarter. The annual field interviewing schedule is shown in Table 1, Chapter I, *Introduction.*

VII. E-BUSINESS AND E-COMMERCE SAMPLES AND DATA COLLECTION VIA INTERNET

In 2000, the American Customer Satisfaction Index was expanded to add measurement of customer satisfaction with companies that sell products and services on the Internet. These companies are in two e-business industries (news and information, portals and search engines) and in three e-commerce industries (retail and auctions, brokerage, travel). Internet interviewing is appropriate for obtaining customer evaluations for these Internet-based companies.

A. SAMPLE SELECTION

Samples are drawn from the Survey Spot Panel developed and maintained by Survey Sampling International (Survey Sampling International, 2004). Survey Spot is an online panel with 1,226,295 active members 18 years or older in the United States. Respondents give explicit permission to receive invitations for surveys and receive incentives via a monthly cash drawing system that rewards respondents for participation in surveys, regardless of whether they qualify for participation in a particular survey.

For ACSI, a series of random samples are drawn from the panel so as to match the age and gender demographics of the population based on recent census data. The selected individuals are then invited by e-mail to visit the MSInteractive Web site and complete the survey. Invitations are sent out in three waves for each interview period, and reminder e-mails are sent to nonresponders.

B. SCREENING TO QUALIFIED CUSTOMERS

During the screening process for the e-business and e-commerce interviews, individuals are informed that they are not eligible to participate unless they are 18 and over and are U.S. citizens. To qualify as a customer for any of the industries, the respondent has to have used one of the measured companies or an “other” company in the industry.

C. DATA COLLECTION VIA INTERNET

For e-business and e-commerce, the standard private sector ACSI questionnaire shown in Appendix D is reformatted for screen display and ease of respondent use. Customers who qualify on the basis of screening proceed through a series of screens on the Internet and input responses to survey questions on their computers.

In 2007, 7,494 Internet interviews were conducted with 6,006 customer respondents (an average of 1.2 company interviews). Internet interviewing results are reported in Appendix E, *Response and Cooperation Rates*, following the tabulation of telephone interviews.

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APPENDIX A: COMPANIES AND GOVERNMENT SERVICES EVALUATED BY CUSTOMERS IN ACSI

Companies and Government Services Evaluated by Customers in ACSI

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
UTILITIES SECTOR				
Energy Utilities		**(Residential revenue)**		
Ameren Corporation	6,880	2,408		339
American Electric Power Company, Inc.	12,622	4,418		192
Atmos Energy Corporation	6,152	2,153		372
CenterPoint Energy, Inc.	9,319	3,262		270
CMS Energy Corporation	6,810	2,384		340
Consolidated Edison, Inc.	12,137	4,248		204
Dominion Resources, Inc.	16,524	5,783		140
DTE Energy Company	9,024	3,158		279
Duke Energy Corporation	15,967	5,588		143
Edison International	12,622	4,418		192
Energy East Corporation	5,231	1,831		434
Energy Future Holdings Corp.	10,856	3,800		234
Entergy Corporation	11,067	3,873		225
Exelon Corporation	15,654	5,479		150
FirstEnergy Corp.	11,726	4,104		212
FPL Group, Inc.	15,710	5,499		148
MidAmerican Energy Holdings Company	10,301	928		NL
National Grid plc (National Grid USA)		5,267	25,513	Non-US
NiSource Inc.	7,496	2,624		320
Northeast Utilities	6,897	2,414		337
Pepco Holdings, Inc.	8,363	2,927		290
PG&E Corporation	12,539	4,389		196
PPL Corporation	6,904	2,416		336
Progress Energy, Inc.	10,702	5,746		238
Public Service Enterprise Group Incorporated	12,288	4,301		229
Reliant Energy, Inc.	10,905	3,845		210
Sempra Energy	11,850	4,148		168
Southern Company	14,356	5,025		168
Xcel Energy Inc.	9,848	3,447		251
Total Energy Utilities	**300,750**	**109,883**	**25,513**	
TOTAL UTILITIES SECTOR	**300,750**	**109,883**	**25,513**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
MANUFACTURING/NONDURABLE GOODS SECTOR				
Food Manufacturing (baked goods, canned and packaged fresh foods, cereal, confectionery, meat and cheese)				
Campbell Soup Company	7,778	5,004		311
ConAgra Foods, Inc.	14,172	8,078		173
Dole Food Company, Inc.	5,871	2,708		367
General Mills, Inc.	11,640	9,800		213
H.J. Heinz Company	9,331	2,600		269
The Hershey Company	4,944	3,955		453
Kellogg Company	10,907	8,180		232
Kraft Foods Inc.[2]	*	23,118		64
Mars, Incorporated	18,000	7,200		NL
Nestlé USA, Inc. (Nestlé S.A.)		21,400	69,208	Non-US
Quaker (PepsiCo, Inc.)	*	1,757		63
Sara Lee Corporation	18,539	5,263		125
Tyson Foods, Inc.	25,559	23,459		86
Total Food Manufacturing	**126,741**	**122,522**	**69,208**	
Pet Food				
Del Monte Foods Company	3,309	542		604
Hill's Pet Nutrition, Inc. (Colgate-Palmolive Company)	*	1,713		200
The Iams Company (The Procter & Gamble Company)	*	3,945		25
Mars, Incorporated	*	1,800		NL
Nestlé Purina PetCare Company (Nestlé S.A.)		6,644	*	Non-US
Total Pet Food	**3,309**	**14,644**	**0**	
Soft Drinks				
Cadbury Schweppes plc		3,129	11,219	Non-US
The Coca-Cola Company[3]	43,892	24,568		94+118
PepsiCo, Inc.[4]	51,839	23,333		63+191+531
Total Soft Drinks	**95,731**	**51,030**	**11,219**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Breweries				
Anheuser-Busch Companies, Inc.	15,717	7,796		146
Miller Brewing Company (SABMiller plc)		4,898	15,307	Non-US
Molson Coors Brewing Company	5,903	2,620		386
Total Breweries	**21,620**	**15,314**	**15,307**	
Cigarettes				
Philip Morris USA Inc. (Altria Group, Inc.)	70,324	18,474		23
Reynolds American Inc.	8,510	8,510		288
Total Cigarettes	**78,834**	**26,984**	**0**	
Apparel (casual clothes, jeans and sportswear, underwear and hosiery)				
Hanesbrands Inc.	4,994	3,596		NL
Jones Apparel Group, Inc.	4,743	4,553		470
Levi Strauss & Co.	4,193	2,091		510
Liz Claiborne, Inc.	4,994	3,596		451
VF Corporation	7,034	5,627		352
Total Apparel	**25,958**	**19,463**	**0**	
Athletic Shoes				
adidas AG		1,886	7,859	Non-US
NIKE, Inc.	14,955	5,998		158
Total Athletic Shoes	**14,955**	**7,884**	**7,859**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Personal Care & Cleaning Products (cleaners, laundry detergent, shampoo, soap, toothpaste)				
The Clorox Company	4,660	4,194		475
Colgate-Palmolive Company	12,238	5,508		200
The Dial Corporation (Henkel KGaA)		1,109	14,181	Non-US
The Procter & Gamble Company	68,222	32,283		25
Unilever		9,816	54,413	Non-US
Total Personal Care & Cleaning Products	**85,120**	**52,910**	**68,594**	
TOTAL MANUFACTURING/NONDURABLE GOODS SECTOR	**452,268**	**310,751**	**172,187**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
MANUFACTURING/DURABLE GOODS SECTOR				
Personal Computers				
Apple Inc.	19,315	2,454		121
Dell Inc.	57,095	14,600		34
Gateway, Inc.	3,981	3,663		529
Hewlett-Packard Company	91,658	12,559		14
Hewlett-Packard				
Compaq				
Total Personal Computers	**172,049**	**33,276**	**0**	
Cellular Telephones				
Motorola, Inc.	43,739	10,104		52
Nokia Corporation		1,976	40,496	Non-US
Samsung Electronics Co., Ltd.		5,900	141,421	Non-US
Total Cellular Telephones	**43,739**	**17,980**	**181,917**	
Electronics (TV/VCR/DVD)				
TV, VCR, DVD aggregated	0	32,430	32,430	Non-US
Total Electronics (TV/VCR/DVD)	**0**	**32,430**	**32,430**	
Major Appliances (washer, dryer, stove, refrigerator, dishwasher)				
AB Electrolux		1,629	157,600	Non-US
General Electric Company	168,307	5,536		6
Whirlpool Corporation	18,080	11,752		127
Total Major Appliances	**186,387**	**18,917**	**157,600**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Automobiles & Light Vehicles				
Bayerische Motoren Werke AG (BMW)		13,691	55,255	Non-US
DaimlerChrysler AG			177,395	Non-US
Chrysler		56,766	*	
Dodge		*	*	
Jeep		*	*	
Mercedes-Benz		25,544	*	
Ford Motor Company	160,126	66,300		7
Ford	*	*		
Lincoln, Mercury	*	*		
General Motors Corporation	192,604	115,983		3
Buick		*		
Cadillac	*	*		
Chevrolet	*	*		
GMC	*	*		
Pontiac	*	*		
Saturn Corporation	*	*		
Honda Motor Co., Ltd.		36,061	84,218	Non-US
Hyundai Motor Company		17,291	57,636	Non-US
Kia Motors Corporation		4,703	15,676	Non -US
Mazda Motor Corporation		7,003	24,830	Non-US
Nissan Motor Co., Ltd.		24,053	80,178	Non-US
Toyota Motor Corporation		57,307	179,083	Non-US
Toyota				
Lexus				
Volkswagen AG		16,253	112,826	Non-US
Total Automobiles & Light Vehicles	**352,730**	**440,955**	**787,097**	
TOTAL MANUFACTURING/DURABLE GOODS SECTOR	**754,905**	**543,558**	**1,159,044**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
RETAIL TRADE SECTOR				
Supermarkets				
The Kroger Co.	66,111	66,111		26
Publix Super Markets, Inc.	21,820	21,820		107
Safeway Inc.	40,185	36,167		56
SUPERVALU INC.	19,864	19,864		117
Wal-Mart Stores, Inc.	*	80,202		1
Whole Foods Market, Inc.	5,607	5,271		411
Winn-Dixie Stores, Inc.	7,878	7,878		305
Total Supermarkets	**161,465**	**237,313**	**0**	
Health & Personal Care Stores				
CVS Caremark Corporation	43,814	43,814		51
Rite Aid Corporation	17,271	17,271		134
Walgreen Co.	47,409	47,409		44
Total Health & Personal Care Stores	**108,494**	**108,494**	**0**	
Gasoline Stations				
Gasoline stations (aggregated)	191,650	383,300	191,650	2+4+Non-US
Total Gasoline Stations	**191,650**	**383,300**	**191,650**	
Department & Discount Stores				
Army and Air Force Exchange Service (AAFES)	7,990	7,990		NL
Dillard's, Inc.	7,849	7,849		307
Dollar General Corporation	9,170	9,170		273
J.C. Penney Company, Inc.	19,903	19,903		116
Kohl's Corporation	15,544	15,544		152
Macy's, Inc.	28,711	28,711		76
Nordstrom, Inc.	8,561	7,761		286
Sears Holdings Corporation	53,012	47,826		38
Target Corporation	59,490	59,490		33
Wal-Mart Stores, Inc.	351,139	160,382		1
Total Department & Discount Stores	**561,369**	**364,626**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Specialty Retail Stores				
Barnes & Noble, Inc.	5,261	5,261		430
Best Buy Co., Inc.	30,818	27,680		72
Borders Group, Inc.	4,114	3,485		516
Circuit City Stores, Inc.	11,598	11,094		215
Costco Wholesale Corporation	60,151	60,151		32
The Gap Inc.	15,943	14,508		144
The Home Depot, Inc.	90,837	90,837		17
Lowe's Companies, Inc.	46,927	46,927		45
Office Depot, Inc.	15,011	11,362		156
OfficeMax Incorporated	8,966	8,787		280
SAM'S CLUB (Wal-Mart Stores, Inc.)	*	39,798		1
Staples, Inc.	18,161	15,800		126
The TJX Companies, Inc.	17,516	14,048		133
Total Specialty Retail Stores	**325,303**	**349,738**	**0**	
TOTAL RETAIL TRADE SECTOR	**1,348,281**	**1,443,471**	**191,650**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
TRANSPORTATION & WAREHOUSING SECTOR				
Airlines				
American Airlines (AMR Corporation)	22,563	22,563		101
Continental Airlines, Inc.	13,128	13,128		186
Delta Air Lines, Inc.	17,171	17,171		136
Northwest Airlines Corporation	12,586	12,586		195
Southwest Airlines Co.	9,086	9,086		276
United Airlines (UAL Corporation)	19,340	19,340		120
US Airways Group, Inc.	11,557	11,557		216
Total Airlines	**105,431**	**105,431**	**0**	
U.S. Postal Service[5]				
U.S. Postal Service	72,004	64,114		NL
Total U.S. Postal Service	**72,004**	**64,114**	**0**	
Express Delivery				
FedEx Corporation	32,694	32,694		68
United Parcel Service, Inc.	47,547	47,547		43
U.S. Postal Service--Express & Priority Mail	*	7,890		NL
Total Express Delivery	**80,241**	**88,131**	**0**	
TOTAL TRANSPORTATION & WAREHOUSING SECTOR	**257,676**	**257,676**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
INFORMATION SECTOR				
Newspapers				
Newspapers (aggregate of Advance Publications, Inc; Dow Jones & Company, Inc.; Gannett Company, Inc.; McClatchy Corp.; The New York Times Company; Tribune Company)	24,938	24,938		NL+ 896+302+ 830+583+ 413
Total Newspapers	**24,938**	**24,938**	**0**	
Computer Software				
Microsoft Corporation	44,282	19,578		49
Total Computer Software	**44,282**	**19,578**	**0**	
Motion Pictures (motion pictures, video, DVD aggregated nationally)				
Motion pictures (motion pictures, video, DVD aggregated nationally)	22,474	22,474		
Total Motion Pictures	**22,474**	**22,474**	**0**	
Broadcasting TV News				
Television/cable TV News (aggregated nationally)	48,490	48,490		64+165+4 8+88+6
Total Broadcasting TV News	**48,490**	**48,490**	**0**	
Fixed Line Telephone Service				
AT&T Inc.	63,055	14,963		27
Comcast Corporation	*	1,285		84
Cox Communications, Inc. (Cox Enterprises, Inc.)	*	672		NL
Embarq Corporation	5,833	4,346		NL
Qwest Communications International Inc.	13,923	6,275		178
Verizon Communications Inc.	93,221	33,300		13
Total Fixed Line Telephone Service	**176,032**	**60,841**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Wireless Telephone Service				
AT&T Inc.	*	21,439		27
Sprint Nextel Corporation	43,531	31,918		53
T-Mobile USA, Inc. (Deutsche Telekom AG)		14,080	34,880	Non-US
Verizon Communications Inc.	*	38,000		13
Total Wireless Telephone Service	**43,531**	**105,437**	**34,880**	
Cable & Satellite TV				
Charter Communications, Inc.	5,613	5,613		409
Comcast Corporation	25,700	24,415		84
Cox Communications, Inc. (Cox Enterprises, Inc.)	6,722	6,050		NL
The DIRECTV Group, Inc.	14,756	14,756		160
DISH Network Corporation	9,818	9,818		252
Time Warner Cable Inc. (Time Warner Inc.)	44,788	11,103		48
Total Cable & Satellite TV	**107,397**	**71,755**	**0**	
TOTAL INFORMATION SECTOR	**467,144**	**353,513**	**34,880**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
FINANCE & INSURANCE SECTOR				
Banks				
Bank of America Corporation	117,017	41,691		9
Citigroup Inc.	146,777	8,390		8
JPMorgan Chase & Co.	99,973	6,419		11
Wachovia Corporation	46,810	15,700		46
Wells Fargo & Company	47,979	4,920		41
Total Banks	**458,556**	**77,120**	**0**	
Life Insurance				
MetLife, Inc.	53,275	53,275		37
New York Life Insurance Company	28,365	28,365		78
The Northwestern Mutual Life Insurance Company	20,726	20,726		112
Prudential Financial, Inc.	32,488	32,488		66
Total Life Insurance	**134,854**	**134,854**	**0**	
Health Insurance				
Aetna Inc.	25,569	25,569		85
Blue Cross and Blue Shield Association	256,537	256,537		NL
UnitedHealth Group Incorporated	71,542	71,542		21
WellPoint, Inc.	58,953	58,953		35
Total Health Insurance	**412,601**	**412,601**	**0**	
Property & Casualty Insurance				
The Allstate Corporation	35,769	35,769		61
Farmers Group, Inc. (Zurich Financial Services)		3,494	67,186	Non-US
GEICO (Berkshire Hathaway Inc.)	98,539	6,419		12
The Progressive Corporation	14,786	14,786		159
State Farm Mutual Automobile Insurance Company	60,528	60,528		31
Total Property & Casualty Insurance	**209,622**	**120,996**	**67,186**	
TOTAL FINANCE & INSURANCE SECTOR	**1,215,633**	**745,571**	**67,186**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
HEALTH CARE & SOCIAL ASSISTANCE SECTOR				
Ambulatory Care				
Ambulatory care (aggregated nationally)	626,548	626,548		
Total Ambulatory Care	**626,548**	**626,548**		
Hospitals				
Hospitals (aggregated nationally)	627,812	627,812		
Total Hospitals	**627,812**	**627,812**	**0**	
TOTAL HEALTH CARE & SOCIAL ASSISTANCE SECTOR	**1,254,360**	**1,254,360**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
ACCOMMODATION & FOOD SERVICES SECTOR				
Hotels				
Best Western International, Inc.	2,080	1,114		NL
Choice Hotels International, Inc.	35,228	5,472		NL
Global Hyatt Corporation	2,418	1,414		NL
Hilton Hotels Corporation	8,162	6,530		296
InterContinental Hotels Group PLC		4,571	6,530	Non-US
Marriott International, Inc.	12,160	9,728		203
Starwood Hotels & Resorts Worldwide, Inc.	5,979	4,874		381
Wyndham Worldwide Corporation	3,842	2,897		546
Total Hotels	**69,869**	**36,600**	**6,530**	
Limited-Service Restaurants				
Burger King Holdings, Inc.	2,048	162		842
Domino's Pizza, Inc.	1,437	1,150		NL
KFC Corporation (YUM! Brands, Inc.)	9,561	977		262
Little Caesar Enterprises, Inc. (Ilitch Holdings, Inc.)	1,500	1,500		NL
McDonald's Corporation	21,586	10,793		108
Papa John's International, Inc.	1,002	805		NL
Pizza Hut, Inc. (YUM! Brands, Inc.)	*	794		262
Starbucks Corporation	7,787	6,152		310
Taco Bell Corp. (YUM! Brands, Inc.)	*	1,176		262
Wendy's International, Inc.	3,660	2,928		562
Total Limited-Service Restaurants	**48,581**	**26,437**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
Full-Service Restaurants				
Chili's Grill & Bar (Brinker International, Inc.)	4,260	2,599		502
Olive Garden (Darden Restaurants, Inc.)	5,721	2,790		404
Outback Steakhouse (OSI Restaurant Partners, Inc.)	3,941	2,674		535
Red Lobster (Darden Restaurants, Inc.)	*	2,600		404
Total Full-Service Restaurants	**13,922**	**10,663**	**0**	
TOTAL ACCOMMODATION & FOOD SERVICES SECTOR	**132,372**	**73,700**	**6,530**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
PUBLIC ADMINISTRATION SECTOR				
Local Government				
Solid Waste Disposal (Comes under Sector 56: Administrative and Support and Waste Management and Remediation Services)	18,020	18,020		
Police	62,832	62,832		
Total Local Government	**80,852**	**80,852**	**0**	
Federal Government				
Federal agencies[6]	131,947	131,947		
Total Federal Government	**131,947**	**131,947**	**0**	
TOTAL PUBLIC ADMINISTRATION SECTOR	**212,799**	**212,799**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
E-BUSINESS				
News & Information				
ABCNEWS.com (The Walt Disney Company)	34,285	512		64
CNN.com (Time Warner Inc.)	*	253		48
MSNBC.com (NBC Universal, Inc.; Microsoft Corporation)	*	1,567		6+49
NYTimes.com (The New York Times Company)	3,447	47		583
USATODAY.com (Gannett Co., Inc.)	8,033	72		302
Portals & Search Engines				
AOL LLC (Time Warner Inc.)	44,788	6,334		48
Ask.com (IAC/InterActiveCorp)	6,229	327		345
Google Inc.	10,605	10,605		241
MSN (Microsoft Corporation)	*	2,274		49
Yahoo! Inc.	6,246	6,246		357
TOTAL E-BUSINESS	**113,633**	**28,237**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
E-COMMERCE				
Retail & Auctions				
Amazon.com, Inc.	10,711	5,869		237
eBay Inc.	5,970	4,149		383
Netflix, Inc.	997	997		NL
Newegg, Inc.	1,500	1,500		NL
Overstock.com, Inc.	788	799		NL
Brokerage				
The Charles Schwab Corporation	*	862		389
E*TRADE Financial Corporation	3,945	2,420		545
Fidelity Investments (FMR LLC)	*	2,148		NL
TD AMERITRADE Holding Corporation	2,139	2,139		821
Travel				
Expedia, Inc.	2,238	2,014		800
Orbitz Worldwide, Inc.	752	752		NL
priceline.com, Incorporated	1,123	685		NL
Travelocity.com L.P. (Sabre Holdings Corporation)	2,824	664		678
TOTAL E-COMMERCE	**32,987**	**24,998**	**0**	

	2006 Total Revenues of US Companies (millions $)[1]	2006 Revenues in US domestic market segments measured in ACSI (millions $) (Estimated)	Worldwide Revenues of non-US Companies (millions $)	*Fortune* Rank by Revenue, April 30, 2007
TOTAL MEASURED U.S. COMPANIES AND AGENCIES (millions of $)	**6,542,808**	**5,358,517**	**1,656,990**	
GROSS DOMESTIC PRODUCT (GDP) (2006)	**13,194,700**	**13,194,700**		
ACSI MEASURED COMPANIES AS % OF GDP	**49.6%**	**40.6%**		
WORLDWIDE TOTAL REVENUES OF NON-US COMPANIES MEASURED IN ACSI (millions of $)			**1,656,990**	

[1]The asterisks in the Total Revenue column indicate that a company's total revenue is shown under a larger category for that company.
[2]Kraft spun off from Altria Group March 2007; company would have ranked 64th in *Fortune* for year 2006 if separate.
[3]Soft drinks are the only product for which the product and the packaging are done by separate companies. Revenues include The Coca-Cola Company and Coca-Cola Enterprises.
[4]Soft drinks are the only product for which the product and the packaging are done by separate companies. Revenues include PepsiCo, PepsiAmericas, and Pepsi Bottling.
[5]USPS monopoly mail and counter services are measured in the United States Postal Service industry. USPS's *Express* and *Priority Mail* are measured in the express delivery industry.
[6]Federal government is 4% of GDP, but half of this is military. ACSI does not measure Office of the President, Congress, and so forth.

SOURCES:
Annual reports of individual companies (most obtained in *Thomson Research* database).
Hooversonline.com.
Hoover's Handbook of World Business, 2007.
Statistical Abstracts of the United States 2007.
"The Fortune 1000 Ranked Within Industries," *Fortune*, April 30, 2007.
Standard & Poor's Industry Surveys on *S&P Netadvantage* database.

APPENDIX B: ACSI INDUSTRY DEFINITIONS AND CUSTOMER IDENTIFICATION

ACSI INDUSTRY DEFINITIONS AND CUSTOMER IDENTIFICATION

Utilities Sector

Industry: Energy Utilities

Customer identified by these questions:

"Which company provides your electric service?"
"Do you have natural gas service?"
(IF YES) "Which company provides your natural gas service?"

Manufacturing/Nondurable Goods Sector

Industry: Food Manufacturing

Categories:

- baked goods (bread, cake, flour, cookies, crackers)
- cereal (cold or hot)
- confectionery products (chocolate, cocoa, chocolate candy)
- canned & packaged fresh foods (soup, canned vegetables or fruits, pickles, ketchup, packaged salads, fresh vegetables or fruits with a brand name)
- meat & cheese (packaged cold meats, franks, sausage, poultry, cheese)

Customers identified by any of several questions:

"Have you purchased and consumed any baked goods, bread, cakes, flour, cookies, or crackers in the last month?"

"Have you purchased and consumed cold or hot cereal in the last month?"

"Have you purchased and consumed chocolate, cocoa, or chocolate candy in the last month?"

"Have you purchased and consumed any canned goods such as soup, vegetables, fruits, pickles, ketchup, or packaged salads with a brand name in the last month?"

"Have you purchased and consumed any cold meats, franks, sausage, poultry, or cheese in the last month?"

Industry: Pet Food

Customers identified by two-part question:

"Does your household have a cat or a dog?"
(IF YES) "Which brands of pet food have you purchased for your dog or cat to eat in the last month?"

Industry: Soft Drinks

Customers identified by question:

"Have you purchased and consumed soft drinks or pop in the last month?"

Industry: Breweries
Customers identified by two-part question:

> "Are you 21 years of age or older?"
> (IF YES) "Have you purchased and consumed beer in the last month?"

Industry: Cigarettes
Customers identified by two-part question:

> "Are you 21 years of age or older?"
> "Have you purchased and smoked cigarettes in the last month?"

Industry: Apparel
Categories:

- casual clothes
- jeans & sportswear
- underwear & hosiery (underwear, pantyhose, hosiery, socks, tee-shirts, turtlenecks)

Customers identified by questions:

> "Have you purchased casual clothes in the last year?"
> "Have you purchased jeans or sportswear in the last year?"
> "Have you purchased underwear, pantyhose, hosiery, socks, tee-shirts, or turtlenecks in the last year?"

Industry: Athletic Shoes
Customers identified by question:

> "Have you purchased athletic, running, or jogging shoes in the last year?"

Industry: Personal Care & Cleaning Products
Categories:

- cleaners (bleach, ammonia, cleansers, cleaning compounds)
- laundry detergent
- shampoo
- soap
- toothpaste

Customers identified by any of several questions:

> "Have you purchased bleach, ammonia, cleansers, or cleaning compounds in the last three months?"
> "Have you purchased laundry detergent in the last three months?"
> "Have you purchased shampoo in the last three months?"
> "Have you purchased soap in the last three months?"
> "Have you purchased toothpaste in the last three months?"

Manufacturing/Durable Goods Sector

Industry: Personal Computers
Customers identified by question:

> "Have you purchased a new personal computer for your home in the past three years?"

Industry: Cellular Telephones
Customers identified by question:

> "Have you purchased a new cellular phone in the past two years?"

Industry: Electronics (TV/VCR/DVD)
Customers identified by either of two questions:

> "Have you purchased a new television within the last three years for personal use?"
>
> "Have you purchased a new VCR or DVD player within the last three years for personal use?" (NOTE: TV/VCR/DVD combinations are recorded as DVD players.)

Industry: Major Appliances (washer, dryer, stove, refrigerator, dishwasher)
Customers identified by question:

> "Have you purchased a new major appliance such as a washer, dryer, stove, refrigerator, or dishwasher in the past three years?"

Industry: Automobiles & Light Vehicles
Customers identified by question:

> "Have you purchased or personally leased a NEW automobile, van, SUV, or light truck between six months and three years ago, which you still own?"

Retail Trade Sector

Industry: Supermarkets
Customers identified by question:

> "Have you shopped for groceries at a supermarket or another store that sells a wide variety of goods including groceries in the past three months?"

Industry: Health & Personal Care Stores
Customers identified by question:

> "Have you shopped at a drug store or pharmacy store chain in the past three months?""

Industry: Gasoline Stations
Customers identified by question:

> "Have you purchased gasoline for your automobile in the past three months?"

Industry: Department & Discount Stores
Customers identified by question:

> "Have you shopped at a department or discount store for merchandise NOT INCLUDING GROCERIES in the past six months? By department or discount store, I mean a store selling a wide variety of goods and arranged in several departments."

Industry: Specialty Retail Stores
Customers identified by question:

> "Within the past six months, have you shopped at a wholesale warehouse club, or a store that specializes in selling only certain products or goods? Some examples of specialty stores are those that mostly sell home improvement products, toys, electronics, computer products, office products, pet supplies, clothes, books, music, and so forth."

Transportation & Warehousing Sector

Industry: Airlines
Customers identified by question:

> "Have you flown on a scheduled airline in the past year?"

Industry: U.S. Postal Service
Customers identified by question:

> "Have you visited a U.S. Post Office in the past six months to buy stamps, pick up mail, or use any of the counter services?"

Industry: Express Delivery
Customers identified by question:

> "Have you used a parcel delivery, overnight, or two-day mail delivery service for sending a letter, a document, or a package in the past six months?"

Information Sector

Industry: Newspapers
Customers identified by question:

> "In the past week, have you read a newspaper, which you purchased or subscribed to?"

Industry: Computer Software
Customers identified by question:

> "Have you purchased new computer software for your home computer in the past year? By software, I mean any programs used for computer applications such as operating systems, business applications, education, entertainment (including games), or other computer applications, but **not** including software for home gaming systems, such as Xbox or Sony PlayStation."

Industry: Motion Pictures

Customers identified by question:

"Have you been to a movie theater, rented or purchased a videotape or DVD, or watched a movie on pay-per-view in the past year?"

Industry: Broadcasting TV News

Customers identified by question:

"In the past month, have you watched a **national** network or cable TV news program?"

Industry: Fixed Line Telephone Service

Customers identified by questions:

"Which company provides your LONG DISTANCE telephone service?"
"Which company provides your LOCAL telephone service?"

Industry: Wireless Telephone Service

Customers identified by question:

"Do you currently have cellular phone service?"

Industry: Cable & Satellite TV

Customers identified by question:

"Do you currently subscribe to a cable television or satellite television service?"

Finance & Insurance Sector

Industry: Banks

Customers identified by question:

"Do you have an active checking account, savings account, or bank loan in your name at a bank, not a credit union?"

Industry: Life Insurance

Customers identified by question:

"Do you have life insurance in your own name?"

Industry: Health Insurance

Customers identified by question:

"Do you have healthcare insurance?"

Industry: Property & Casualty Insurance

Customers identified by question:

"Do you have homeowner's insurance, or automobile insurance, or other property or casualty insurance in your own name?"

Health Care & Social Assistance Sector

Industry: Ambulatory Care

Customers identified by question:

> "Within the past year, have you had an office visit with a healthcare professional, including visits to clinics or urgent care centers but not including visits to hospital emergency rooms? By healthcare professional I mean any physician, physician assistant or nurse practitioner, dentist, optometrist, mental health practitioner, physical, occupational, or speech therapist, or other healthcare professional."

Industry: Hospitals

Customers identified by question:

> "Have you used the services of a hospital in the past three years?" (That includes a parent that used the hospital services for a child.)

Accommodation & Food Services Sector

Industry: Hotels

Customers identified by question:

> "Have you stayed overnight at a hotel or motel when traveling for business or pleasure in the United States in the past year?"

Industry: Limited-Service Restaurants

Customers identified by question:

> "Have you purchased food or drinks from a coffee shop or fast food restaurant or ordered pizza for carry out or delivery in the past three months?"

Industry: Full-Service Restaurants

Customers identified by question:

> "Have you dined at a full-service restaurant in the past six months?"

Public Administration Sector

Local Government

Solid Waste Disposal

Customers identified by the question:

> "Does your local government provide your garbage and trash collection service?"

Police

Customers identified by question:

> "Have you had any contact with your local police in the past three years—either asking your police for information or help, being stopped for a traffic violation or some other violation, or any other way in which you may have talked to police officers or the desk at a police station?"

Federal Government

Federal Agencies
Customers identified by the questions:

> **"Not counting the Postal Service**, have you had experience with any U.S. Government Federal agencies in the past year? By experience we mean looking at the agency's Web site, talking with agency personnel by phone or in person, receiving the agency's printed materials or brochures, visiting an agency site or office, or receiving a check or a benefit."

E-Business (online interviewing)

Customers for all industries are identified by the question:

> "Are you a resident of the United States and 18 years old or older?"

Industry: News & Information
Customers identified by the question:

> "Which of the following news and Information sites did you access in the past three months?"

Industry: Portals & Search Engines
Customers identified by the question:

> "Which Internet service provider (ISP) do you typically use to connect to the Internet?"

E-Commerce (online interviewing)

Customers for all industries are identified by the question:

> "Are you a resident of the United States and 18 years old or older?"

Industry: Retail & Auctions
Customers identified by the question:

> "From which retailers or auction sites have you purchased merchandise on the Internet in the past three months?"

Industry: Brokerage
Customers identified by the questions:

> "From which firms do you have a full-service brokerage account?"

> "Did you make a financial transaction such as buying stocks, bonds, or mutual funds, or receive financial consulting/planning assistance from (NAME OF COMPANY) on the Internet in the past three months?"

Industry: Travel
Customers identified by question:

> "From which Internet travel company did you make a reservation (for a flight, hotel room or a rental car, or any vacation travel package) in the past six months?"

APPENDIX C: EXAMPLE SCREENING QUESTIONNAIRES AND BRAND/COMPANY IDENTIFICATION

American Customer Satisfaction Index
Introduction

[ASK TO SPEAK TO PERSON RESIDING AT HOUSEHOLD WHO HAS HAD THE MOST RECENT BIRTHDAY, BETWEEN 18 AND 84 YEARS OF AGE]

Hello, I'm _____calling on behalf of the University of Michigan. We are conducting research on how satisfied users are with products and services provided by federal government agencies and private companies as part of the American Customer Satisfaction Index. Your name will be confidential, and I will ask you only about products and services you have recently purchased and used. Your participation is voluntary and poses no foreseeable risk to you. You may stop at any time or skip any question you do not wish to answer. Your opinions are important because you have been chosen randomly to represent consumers across the United States and your responses will be added to a growing database of evaluations of customer satisfaction used by researchers, companies, and government agencies to improve the products and services provided to you, the consumer.

_____

Sample ACSI Screening Questionnaire
Personal Computers

“Have you purchased a **new** personal computer for your home in the past 3 years?”

1 Yes
2 No
DK
REF

(IF YES)

“Which brand did you purchase?”

PROG. NOTE: Insert Company/Brand list

9999 Other (Specify)
DK
REF

Sample ACSI Screening Questionnaire
Supermarkets

"Have you shopped for groceries at a supermarket or another store that sells a wide variety of goods including groceries in the past 3 months?"

3	Yes
4	No
DK	
REF	

(IF YES)

"Which supermarket or other store have you shopped for groceries at most frequently in the past 3 months?" *(READ IF NECESSARY: "not including convenience stores.") (IF MORE THAN ONE, EMPHASIZE MOST FREQUENTLY)*

PROG. NOTE: Insert Company/Brand list

9999	Other (Specify)
DK	
REF	

Sample ACSI Company/Brand Database
Personal Computers

The following is a list of personal computer brands linked to measured companies in the CATI system by the ACSI Company/Brand Database for this industry.

Apple	Apple
Apple eMac	Apple
Apple iBook	Apple
Apple iMac	Apple
Apple MacBook	Apple
Apple MacBook Pro	Apple
Apple Macintosh	Apple
Apple Power Mac	Apple
Apple PowerBook	Apple
Compaq	Hewlett-Packard-Compaq
Compaq Presario (All Models)	Hewlett-Packard-Compaq
Compaq X Gaming PC	Hewlett-Packard-Compaq
Dell	Dell
Dell Dimension (All Models)	Dell
Dell Inspiron (All Models)	Dell
Dell Latitude (All Models)	Dell
Dell Media Center	Dell
Dell Precision	Dell
Dell XPS	Dell
Dimension	Dell
eMac	Apple
eMachine (All Models)	Gateway
Gateway	Gateway
Gateway Convertible Notebook	Gateway
Gateway Gaming PC (All Models)	Gateway
Gateway Media Center (All Models)	Gateway
Gateway Profile (All Models)	Gateway
Gateway Tablet PC (All Models)	Gateway
Hewlett-Packard	Hewlett-Packard-HP
HP	Hewlett-Packard-HP
HP Blade	Hewlett-Packard-HP
HP Media Center (All Models)	Hewlett-Packard-HP
HP Pavilion (All Models)	Hewlett-Packard-HP
HP TouchSmart	Hewlett-Packard-HP
iBook	Apple
iMac	Apple
Inspiron	Dell
Latitude	Dell
Mac	Apple
Mac mini	Apple
MacBook	Apple
MacBook Pro	Apple
Macintosh	Apple
Power Mac	Apple
PowerBook	Apple
Presario	Hewlett-Packard-Compaq
Voodoo PC	Hewlett-Packard-HP

Sample ACSI Company/Brand Database
Supermarkets

The following is a list of supermarket chains linked to measured companies in the CATI system by the ACSI Company/Brand Database for this industry.

Acme Markets	Albertson's LLC
Albertson's	Albertson's LLC
Baker's	The Kroger Company
Bell Markets	The Kroger Company
Bigg's	SUPERVALU
Bristol Farms	Albertson's LLC
Cala Foods	The Kroger Company
Carr-Gottstein	Safeway
Carrs	Safeway
City Market	The Kroger Company
City Markets	Winn-Dixie Stores
Cub Foods	SUPERVALU
Dillon's Food Stores	The Kroger Company
Dominick's	Safeway
Dominick's Fresh Stores	Safeway
Farm Fresh	SUPERVALU
Food4less	The Kroger Company
Foods Co.	The Kroger Company
Fred Meyer	The Kroger Company
Fresh Stores	Safeway
Fry's Food & Drug Stores	The Kroger Company
Fry's Marketplace	The Kroger Company
Genuardi's	Safeway
Gerbes Supermarkets	The Kroger Company
Grocery Warehouse	Albertson's LLC
Hilander	The Kroger Company
Hornbacher's	SUPERVALU
Jay C	The Kroger Company
Jewel	Albertson's LLC
Jewel-Osco	Albertson's LLC
Kessel Food Markets	The Kroger Company
King Soopers	The Kroger Company
Kroger	The Kroger Company
Lucky Stores	Albertson's LLC
Marketplace	Winn-Dixie Stores
Owen's Market	The Kroger Company
Pavilions	Safeway
Pay Less Super Markets	The Kroger Company
Pricerite	The Kroger Company
Publix	Publix Super Markets
QFC (Quality Food Centers)	The Kroger Company
Quality Food Centers (QFC)	The Kroger Company
Ralphs	The Kroger Company
Randalls	Safeway
Sack & Save	Winn-Dixie Stores
Safeway	Safeway
Save Rite	Winn-Dixie Stores

Save-A-Lot	SUPERVALU
Scott's Food	SUPERVALU
Shaw's	Albertson's LLC
Shop 'N Save	SUPERVALU
Shoppers Food Warehouse	SUPERVALU
Simon David	Safeway
Smith's Food & Drug Centers	The Kroger Company
Star Markets	Albertson's LLC
Super Saver	Albertson's LLC
Supervalu	SUPERVALU
Tom Thumb Food & Drug Stores	Safeway
Vons	Safeway
Wal-Mart	Wal-Mart Stores
Wal-Mart Neighborhood Market	Wal-Mart Stores
Wal-Mart Supercenter	Wal-Mart Stores
Winn-Dixie	Winn-Dixie Stores
Winn-Dixie Marketplace	Winn-Dixie Stores

APPENDIX D: CUSTOMER SATISFACTION MEASUREMENT QUESTIONNAIRES

ACSI Private Sector Questionnaire

(For input to models in Figures 1 and 1a)

NOTE: The questionnaire for most companies used for the model in Figure 1 is shown first; followed by a section of six questions to be substituted for Q4, Q5, Q6 for the expanded model in Figure 1a in which product quality and service quality are measured separately.

In the questionnaire where the words [SCREENER INSERT] appear, the CATI (computer-assisted-telephone-interviewing) program inserts the name of the company, product, brand, service, store, restaurant, hotel, etc., that the respondent has named in response to the screener questions. Within a specific question, once the [SCREENER INSERT] has been mentioned, second or third mentions may be more generic wordings for the product/service/outlet category.

(To begin/Next), think back to before you purchased your [SCREENER INSERT] and remember your expectations about that particular [SCREENER INSERT]. I am going to ask you three questions about your expectations. The first concerns your expectations of the overall quality of your [SCREENER INSERT]; the other two questions consider your expectations of specific requirements of the [SCREENER INSERT], and your expectations of potential problems with the [SCREENER INSERT]. Each time we will use a scale of 1 to 10, although the meaning of the scale will change slightly from question to question.

Let's begin:

Q1. Before you purchased [SCREENER INSERT], you probably knew something about this particular [SCREENER INSERT]. Now, think back and remember your expectations of the overall quality of the [SCREENER INSERT]. Please give me a rating on a 10-point scale on which "1" means your expectations were "not very high" and "10" means your expectations were "very high."

How would you rate your expectations of the overall quality of [SCREENER INSERT]?

1 TO 10_____

11 Don't know
12 Refused

(ROTATE Q2 AND Q3)

Q2. (Again/At that same time), you probably thought about things you personally require from a [SCREENER INSERT], such as [INSERT PRODUCT ATTRIBUTES]. Using a 10-point scale on which "1" now means "not very well" and "10" means "very well," how well did you expect your [SCREENER INSERT] to meet your personal requirements?

1 TO 10_____

11 Don't know
12 Refused

Q3. (Again/At the same time), thinking about your expectations before you purchased (or your recent experiences with) [SCREENER INSERT] . . . you probably thought about how often things could go wrong with the [SCREENER INSERT] regarding such things as [INSERT PRODUCT ATTRIBUTES]. Using a 10-point scale, on which "1" now means "very often" and "10" means "not very often," how often did you expect that things could go wrong with your [SCREENER INSERT]?

1 TO 10_____

11 Don't know
12 Refused

Next, I want you to think about your actual experience with your [SCREENER INSERT]. I am going to ask you five questions, the first deals with your overall experience with [SCREENER INSERT]. The next two questions deal with how well the [SCREENER INSERT] met your personal requirements, and how often things go wrong with [SCREENER INSERT]. The other two questions are about specific characteristics of the product or service…

Q4. First, please consider all your experiences in the past [INSERT TIME PERIOD FROM SCREENER] with your [SCREENER INSERT]. Using a 10-point scale, on which "1" means "not very high" and "10" means "very high," how would you rate the overall quality of your [SCREENER INSERT]?

1 TO 10 _____

11 Don't know
12 Refused

(ROTATE Q5 AND Q6)

Q5. Now thinking about your personal requirements for a [SCREENER INSERT], such as [INSERT PRODUCT ATTRIBUTES], please tell me how well your [SCREENER INSERT] has actually met your requirements. Using a 10-point scale on which "1" now means "not very well" and "10" means "very well," how well has your [SCREENER INSERT] actually met your personal requirements?

1 TO 10_____

11 Don't know
12 Refused

Q6. Now please think about how often things go wrong with the [SCREENER INSERT], regarding such things as [INSERT PRODUCT ATTRIBUTES]. Using a 10-point scale on which "1" now means "very often," and "10" means "not very often," how often have things actually gone wrong with your [SCREENER INSERT]?

1 TO 10_____

11 Don't know
12 Refused

Q7 (OPTIONAL QUESTION ABOUT CHARACTERISTICS OF PRODUCT/SERVICE)

1 TO 10 _____

11 Don't know
12 Refused

Q8 (OPTIONAL QUESTION ABOUT CHARACTERISTICS OF PRODUCT/SERVICE)

1 TO 10 _____

11 Don't know
12 Refused

Now I want you to consider the value of your [SCREENER INSERT] in terms of both (ROTATE: PRICE AND QUALITY/QUALITY AND PRICE).

(ROTATE Q9 AND Q10)

Q9. (FIRST/NEXT) Given the quality of your [SCREENER INSERT], how would you rate the price that you paid (or prices that you pay) for [SCREENER INSERT]? Please use a 10-point scale on which "1" means "very poor price given the quality" and "10" means "very good price given the quality."

1 TO 10 _____

11 Don't know
12 Refused

Q10. (FIRST/NEXT) Given the price that you paid (or prices that you pay at) for your [SCREENER INSERT], how would you rate the quality of your [SCREENER INSERT]? Please use a 10-point scale on which "1" means "very poor quality given the price" and "10" means "very good quality given the price."

1 TO 10_____

11 Don't know
12 Refused

Satisfaction includes many things. Let's move on and talk about your overall satisfaction with your [SCREENER INSERT].

Q11 First, please consider all your experiences to date with your [SCREENER INSERT]. Using a 10-point scale on which "1" means "very dissatisfied" and "10" means "very satisfied," how satisfied are you with your [SCREENER INSERT]?

1 TO 10_____

11 Don't know
12 Refused

Q12. Considering all of the expectations that we have discussed, to what extent has your [SCREENER INSERT] fallen short of your expectations or exceeded your expectations? Using a 10-point scale on which "1" now means "falls short of your expectations" and "10" means "exceeds your expectations," to what extent has your [SCREENER INSERT] fallen short of or exceeded your expectations?

1 TO 10_____

11 Don't know
12 Refused

Q13. Forget your [SCREENER INSERT] for a moment. Now, I want you to imagine an ideal [INSERT GENERIC NAME FOR SCREENER INSERT]. (PAUSE) How well do you think your [SCREENER INSERT] compares with that ideal [INSERT GENERIC NAME FOR SCREENER INSERT]? Please use a 10-point scale on which "1" means "not very close to the ideal," and "10" means "very close to the ideal."

1 TO 10_____

11 Don't know
12 Refused

Next, I want you to think about any communication you may have had with the company that produced your [SCREENER INSERT] regarding complaints about your experience.

Q14. Have you complained to the company about your [SCREENER INSERT] within the past [INSERT SCREENER TIME PERIOD]?

1 Yes
2 No
3 Don't know
4 Refused

{IF Q14 = 1, ASK Q14A; OTHERWISE GO TO Q15}

Q14A. How well, or poorly, was your most recent complaint handled? Using a 10-point scale on which "1" means "handled very poorly" and "10" means "handled very well," how would you rate the handling of your complaint?

1 TO 10_____

11 Don't know
12 Refused

Q15. The next time you are going to [INSERT PURCHASE/USE/SHOP AT] a [SCREENER INSERT], how likely is it that it will be a [SCREENER INSERT] again? Using a 10-point scale on which "1" means "very unlikely" and "10" means "very likely," how likely is it that it will be a [SCREENER INSERT] again?

1 TO 10_____

11 Don't know
12 Refused

{IF Q15 = 6-10, ASK Q16; OTHERWISE GO TO Q17}

Q16. Let us imagine that [SCREENER INSERT] raises its prices. If other [COMPANIES/SUPPLIERS] remain at the same prices, how much can [SCREENER INSERT] raise its price before you definitely would not choose a(n) [SCREENER INSERT] the next time you purchase a [INSERT GENERIC NAME FOR SCREENER INSERT]?

Please provide your answer in percentages up to 25%

0 TO 25_____

26 26% or higher
101 Never would [PURCHASE/USE/SHOP AT] any other [SCREENER INSERT]
102 Don't know
103 Refused

{IF Q15 = 1-5, ASK Q17; OTHERWISE GO TO QD1 CONTINUE/END}

Q17. Let us now imagine that [SCREENER INSERT] lowers its prices. If other [COMPANIES/SUPPLIERS] remain at the same prices, how much must [SCREENER INSERT] lower its price before you would definitely choose a(n) [SCREENER INSERT] the next time you purchase a [GENERIC NAME FOR SCREENER INSERT]?

Please provide your answer in percentages up to 25%

0 TO 25_____

26 26% or higher
101 Never would [PURCHASE/USE/SHOP AT] any other [SCREENER INSERT]
102 Don't know
103 Refused

NOTE: FOR THE EXPANDED MODEL IN FIGURE 1A, SUBSTITUTE THIS INTRODUCTION AND QUESTIONS 4P, 4S, 5P, 5S, 6P, 6S FOR QUESTIONS 4, 5, 6.

Up to this point I have asked you about your expectations prior to your recent experiences with [your] [SCREENER INSERT]. Now I am going to ask you several questions about your ACTUAL EXPERIENCES with [your] [SCREENER INSERT]. Some deal with your experience with the product itself. Others are about your experience with service for that product.

Q4P. First, please consider all your experiences in the last [INSERT TIME PERIOD FROM SCREENER] with your [SCREENER INSERT]. Using a 10-point scale, on which "1" means "not very high" and "10" means "very high," how would you rate the overall quality of your [SCREENER INSERT]?

1 TO 10 _____

11 Don't know
12 Refused

Q4S. Now please consider all your experiences in the last [INSERT TIME PERIOD FROM SCREENER] with service for your [SCREENER INSERT]. Using a 10-point scale, on which "1" means "not very high" and "10" means "very high," how would you rate the overall quality of service you have received for that [SCREENER INSERT]?

1 TO 10_____

11 Don't know
12 Refused

(RANDOMIZE Q5 AND Q6 SERIES)

Q5P. Now thinking about your personal requirements for a [SCREENER INSERT] such as [INSERT PRODUCT ATTRIBUTES], please tell me how well your [SCREENER INSERT] has actually met your requirements. Using a 10-point scale on which "1" now means "not very well" and "10" means "very well," how well has your [SCREENER INSERT] actually met your personal requirements?

1 TO 10_____

11 Don't know
12 Refused

Q5S. Now thinking about your personal requirements for service for your [SCREENER INSERT], such as [INSERT SERVICE ATTRIBUTES], please tell me how well service for your [SCREENER INSERT] has actually met your personal requirements. Using a 10-point scale on which "1" now means "not very well" and "10" means "very well," how well has service for your [SCREENER INSERT] actually met your personal requirements?

1 TO 10_____

11 Don't know
12 Refused

Q6P. Now please think about how often things go wrong with the [SCREENER INSERT], regarding such things as [INSERT PRODUCT ATTRIBUTES]. Use a 10-point scale on which “1” now means “very often,” and “10” means “not very often,” how often have things actually gone wrong with your [SCREENER INSERT]?

1 TO 10_____

11 Don’t know
12 Refused

Q6S. Now please think about how often things go wrong with the service for your [SCREENER INSERT], regarding such things as [INSERT SERVICE ATTRIBUTES]. Using a 10-point scale on which “1” now means “very often,” and “10” means “not very often,” how often have things actually gone wrong with the service for your [SCREENER INSERT]?

1 TO 10_____

11 Don’t know
12 Refused

ACSI Federal Government Services Questionnaire

(For input to model in Figure 3)

QA. **Not counting the Postal Service**, have you had experience with any U.S. Government Federal agencies in the past year? By experience we mean looking at the agency's Web site, talking with agency personnel by phone or in person, receiving the agency's printed materials or brochures, visiting an agency site or office or receiving a check or a benefit. *(READ IF NECESSARY: Have you had experience with any U.S. government Federal agencies in the past year?)*

1 Yes
2 No
DK
REF

{IF QA=1, ASK QB)

QB Which government agencies have you had experience with in the past year? *(ACCEPT UP TO 3 MENTIONS)*

(INSERT LIST OF ALL FEDERAL AGENCIES AND DEPARTMENTS)

REF

QC. Did your experience with (the) (INSERT SCREENER AGENCY MENTIONED) in the past year involve using its Web site, talking with personnel by phone or in person, receiving printed materials or brochures, visiting the agency's site or office, or receiving a check or a benefit? *(ACCEPT UP TO 6 MENTIONS)*

1 Web site
2 Phone or in person contact
3 Receiving printed materials or brochures
4 Visiting agency site or office
5 Receiving a check or a benefit
6 Other (SPECIFY)
DK
REF

Q1 Before you used services from the (INSERT SCREENER AGENCY), you probably knew something about the (SCREENER AGENCY). Now, think back and remember your expectations of the overall quality of the (SCREENER AGENCY)'s services. Please give me a rating on a 10-point scale on which "1" means your expectations were "not very high" and "10" means your expectations were "very high."

How would you rate your expectations of the overall quality of services from the (SCREENER AGENCY)?

[RECORD NUMBER 1-10]
DK
REF

Q2 How difficult or easy was it to get information about the (SCREENER AGENCY)'s services? Using a 10-point scale on which "1" means "information was very difficult to get" and "10" means "information was very easy to get," how difficult or easy was it to get information about the (SCREENER AGENCY)'s services?

[RECORD NUMBER 1-10]
DK
REF

Q3. Was the information about (SCREENER AGENCY)'s services clear and understandable? Using a 10-point scale on which "1" means "not at all clear and understandable" and "10" means "very clear and understandable," how clear and understandable was the information?

[RECORD NUMBER 1-10]
DK
REF

Q4 How timely and efficient was the (SCREENER AGENCY) in providing the services you wanted? Using a 10-point scale on which "1" means "not timely and efficient" and "10" means "very timely and efficient," how timely and efficient was the (SCREENER AGENCY) in providing the services?

[RECORD NUMBER 1-10]
DK
REF

Q5 How difficult or easy was it to obtain services from the (SCREENER AGENCY)? Using a 10-point scale on which "1" means "very difficult" and "10" means "very easy," how difficult or easy was it to obtain the services you wanted from the (SCREENER AGENCY)?

[RECORD NUMBER 1-10]
DK
REF

{IF QC = 2 OR 4, ASK Q6-Q7; OTHERWISE GO TO Q8}

Q6 How courteous were the (SCREENER AGENCY) personnel? Using a 10-point scale on which "1" means "not at all courteous" and "10" means "very courteous," how courteous were the (SCREENER) personnel?

[RECORD NUMBER 1-10]
DK
REF

Q7 How professional were the (SCREENER AGENCY) personnel? Using a 10-point scale on which "1" means "not at all professional" and "10" means "very professional," how professional were the (SCREENER AGENCY) personnel?

[RECORD NUMBER 1-10]
DK
REF

{IF QC = 1, ASK Q8-Q9; OTHERWISE GO TO Q10}

Q8 How logically organized and easy to use is the (SCREENER AGENCY)'s Web site? Using a 10-point scale on which "1" means "not logically organized and difficult to use" and "10" means "very well organized and easy to use," how difficult or easy to use is the (SCREENER AGENCY)'s Web site?

[RECORD NUMBER 1-10]
DK
REF

Q9. Is information from the (SCREENER AGENCY)'s Web site useful in terms of being current, accurate, helpful, and relevant? Using a 10-point scale on which "1" means "not at all useful" and "10" means "very useful," how useful in information from the (SCREENER AGENCY)'s Web site?

[RECORD NUMBER 1-10]
DK
REF

Q10 Please consider your most recent experiences with the (SCREENER AGENCY)'s services. Using a 10-point scale on which "1" means "not very high" and "10" means "very high," how would you rate the **overall quality** of the (SCREENER)'s services?

[RECORD NUMBER 1-10]
DK
REF

Satisfaction includes many things. Let's move on and talk about your overall satisfaction with the (SCREENER AGENCY)'s services.

Q11 First, please consider all your experience with the (SCREENER AGENCY)'s services. Using a 10-point scale on which "1" means "very dissatisfied" and "10" means "very satisfied," how satisfied are you with the (SCREENER AGENCY)'s services?

[RECORD NUMBER 1-10]
DK
REF

Q12 Considering all of your expectations, to what extent have the (SCREENER AGENCY)'s services fallen short of your expectations or exceeded your expectations? Using a 10-point scale on which "1" now means "falls short of your expectations" and "10" means "exceeds your expectations," to what extent have the (SCREENER AGENCY)'s services fallen short of or exceeded your expectations?

[RECORD NUMBER 1-10]
DK
REF

Q13 Forget the (SCREENER AGENCY) for a moment. Now, I want you to imagine an ideal organization that offers the same types of services. (PAUSE) How well do you think the (SCREENER AGENCY) compares with that ideal organization? Please use a 10-point scale on which "1" means "not very close to the ideal," and "10" means "very close to the ideal."

[RECORD NUMBER 1-10]
DK
REF

Next, I want you to think about any communication you may have had with the (SCREENER AGENCY) regarding complaints about your experience.

Q14. Have you complained to the (SCREENER AGENCY) in the past year?

1 Yes
2 No
DK
REF

{IF Q14 = 1, ASK Q14A; OTHERWISE GO TO Q15}

Q14. How well, or poorly, was your most recent complaint handled? Using a 10-point scale on which "1" means "handled very poorly" and "10" means "handled very well," how would you rate the handling of your complaint?

[RECORD NUMBER 1-10]
DK
REF

Q15 How confident are you that the (SCREENER AGENCY) will do a good job providing the services that you used in the future? Using a 10-point scale on which “1” means “not at all confident” and “10” means “very confident,” how confident are you that the (SCREENER AGENCY) will do a good job in the future?

[RECORD NUMBER 1-10]
DK
REF

Q16 If asked, how willing would you be to say positive things about the job the (SCREENER AGENCY) is doing in administering the kinds of services you used? Using a 10-point scale on which “1” means “not at all willing” and 10 means “very willing,” how willing would you be to say positive things about the (SCREENER AGENCY)?

[RECORD NUMBER 1-10]
DK
REF

Demographics

Now, we need to ask a few demographic questions for the ACSI consumer profile...

QI1. Within the past six months have you purchased any products or services via the Internet?

1 Yes
2 No
DK
REF

QD1. What is your age, please?

[RECORD NUMBER OF YEARS 18-84]
DK
REF

QD2. What is the highest level of formal education you completed? *(READ CODES 1-5)*

1 Less than high school
2 High school graduate
3 Some college or associate degree
4 College graduate
5 Post-Graduate
DK
REF

QD3. Are you of Hispanic, Latino or Spanish origin?

1 Yes
2 No
DK
REF

QD4. Do you consider your race(s) as: *(READ CODES 1-5, ACCEPT UP TO 5 MENTIONS)*

1 White
2 Black/African American
3 American Indian/Alaska Native
4 Asian
5 Native Hawaiian or other Pacific Islander
6 Other race
DK
REF

QD5. What was your total annual family income in 2007? *(READ CODES 1-7)*

1 Under $20,000
2 $20,000 but less than $30,000
3 $30,000 but less than $40,000
4 $40,000 but less than $60,000
5 $60,000 but less than $80,000
6 $80,000 but less than $100,000
7 $100,000 or more
DK
REF

QD6. Gender (By Observation)

1 Male
2 Female

PROG. NOTE: Move in DMA from sample

PROG. NOTE: Move in MSA CODE from sample

PROG. NOTE: Move in STATE from sample

PROG. NOTE: Move in MET STATUS CODE from sample

APPENDIX E: RESPONSE AND COOPERATION RATES

DISPOSITION OF SAMPLED TELEPHONE NUMBERS AND RESPONSE AND COOPERATION RATES (2006/07 ACSI)

U	**UNIVERSE OF SAMPLED TELEPHONE NUMBERS**	**1,436,448**
	Noneligible housing units	
	Disconnect/out of service	290,777
	Business	65,108
	Secondary line	170
	Computer/FAX	52,716
	Number changed	76
	Wrong phone number	883
	Cellular phone	1,035
NEU	**TOTAL NONELIGIBLE HOUSING UNITS**	**410,765**
	Noneligible respondents	
	Noncustomer of any companies or government services	14,138
	Filter	5,156
	Other noneligible respondent	877
NER	**TOTAL NONELIGIBLE RESPONDENTS**	**20,171**
	Quota-filled, so respondent noneligible for interview	
QFC	Customer of quota-filled company	250
QFCB	Scheduled for callback, but company quotas filled or interview period ended	62,099
QF	**TOTAL QUOTA-FILLED**	**62,349**
EU	**ELIGIBLE UNIVERSE OF SAMPLED TELEPHONE NUMBERS**	**943,163**

	Interviewed customers	
I	Complete interview, measured company	33,926
I	Completed interview, short/nonmeasured company	1,772
I	Total Completed Interviews	35,698
P	Partial interview	250
I+P	**TOTAL INTERVIEWS**	**35,948**
	Refusals	
RQ	**TOTAL QUALIFIED CUSTOMER REFUSAL**	**3,038**
	Unknown eligibility/no contact with potential household or customer—noncontact	
UE	Refusal before screening for eligible customer respondent	280,026
UE	No answer after repeated calls (4), different times of day over multiple days/ can't determine if housing unit	526,535
UE	Answering machine/voice mail for repeated calls (4) over multiday period	58,427
UE	Busy or no answer, all calls (4)	24,503
UE	Non-English speaking/hard of hearing	14,686
UE	**TOTAL UNKNOWN ELIGIBILITY**	**904,177**
U	**UNIVERSE OF SAMPLED NUMBERS**	**1,436,448**
NEU	**LESS NON-ELIGIBLE UNITS**	**-410,765**
NER	**LESS NON-ELIGIBLE RESPONDENTS**	**-20,171**
QF	**LESS QUOTA FILLED RESPONDENTS**	**-62,349**
EU	**ELIGIBLE UNIVERSE OF SAMPLED PHONE NUMBERS**	**943,163**

Using the codes shown in the left column of the preceding table, survey cooperation and response rates are calculated according to American Association of Public Opinion Research reporting standards. (American Association of Public Opinion Research, 2008).

Based on completed (not partial) interviews, the cooperation rate for those screened and identified as customers is:

COOPERATION RATE = I/(I+P+RQ)

COOP = (35,698)/(35,698+250+3,038) = 91.6%

RESPONSE RATE = I/(I+P+RQ)+e(UE)

where **e** is the incidence of identified customers in households able to be screened.

For ACSI, **e** is the product of two estimates $\mathbf{e_h}$ and $\mathbf{e_c}$. $\mathbf{e_h}$ is the proportion of residential households among telephone numbers of unknown eligibility **(UE)** and $\mathbf{e_c}$ is the proportion of customers in households able to be reached.

The best estimate of $\mathbf{e_h}$ is **0.47** (Kennedy et al., 2008).

The estimate of $\mathbf{e_c}$ is:

$\mathbf{e_c = (I+P+RQ)/(I+P+RQ+NER)}$

$\mathbf{e_c = (35,698+250+3,038)/(35,698+250+3,038+20,171) = 0.659}$

$\mathbf{e = e_h \times e_c = 0.47 \times 0.659 = 0.310}$

However, knowing that the cooperation rate is 91.6%, rather than 100%, a response rate is now calculated where both **e** and **COOP** rates are applied to the quota-filled cases (QF) and consider that amount to be completed interviews. By applying **e** and **COOP**, we have accounted for the fact that some of the respondents would have refused or broken off the interview. The response rate then is:

RESPONSE RATE (AAPOR RR(3)) = (I+COOP(QF))/(I+P+RQ+QF+e(UE)) =

RR(3) = (35,698+(0.916)(62,349))/(35,698+250+3,038+62,349+(0.310)(904,177))
= 24.3%

RESPONSE RATES FOR INTERNET INTERVIEWS (2007 ACSI)

E-Commerce Interview Results	
20,816	Users who came to the site (6.1% of those sent e-mail invitations).
4,502`	Did not qualify as customers
10,902	Respondents who were screened out because interviews for the company from which they had purchased were already completed.
5,412	Qualified respondents.
3,685	Qualified respondents who completed the interview, including the demographic questions (68.1%).
4,525	Completed company interviews (an average of 1.2 company interviews per qualified respondent).

E-Business Interview Results	
4,308	Users who came to the site (7.7% of those sent e-mail invitations).
87	Did not qualify as customers
1,792	Respondents who were screened out because interviews for the company from which they had purchased were already completed.
2,429	Qualified respondents.
2,321	Qualified respondents who completed the interview, including the demographic questions (95.6%).
2,969	Completed company interviews (an average of 1.2 company interviews per qualified respondent).

APPENDIX F: SAMPLE PROFILE

2007 ACSI CUSTOMER SAMPLE

Demographic Characteristic	2006 American Community Survey, U.S. Bureau of the Census (%)	2007 ACSI Customers (%)
Age		
18-34	29	14
35-54	40	41
55 and over	30	43
Income		**(2006)**
Under $20,000	20	9
$20,000-30,000	11	9
$30,000-40,000	11	9
$40,000-60,000	17	16
$60,000-80,000	16	14
$80,000-100,000	7	10
$100,000 or more	18	19
Refused/don't know	—	17
Race		
White	74	86
Black/African American	12	6
American Indian	1	2
Asian	4	1
Other	8	4
Ethnicity		
% Hispanic/Latino	15	5
Gender		
Male	49	38
Female	51	62
Educational attainment	(25 and over)	
Less than high school graduate	16	3
High school graduate	30	21
Some college	27	32
College graduate	17	25
Postgraduate	10	19