

Development of Scaled
Measures of User and Citizen
Satisfaction With
Mn/DOT Services

CTS
HE
193
.H36
1996

UNIVERSITY OF MINNESOTA
CENTER FOR
TRANSPORTATION
STUDIES



Minnesota Department of Transportation

Office of Research Administration
Mail Stop 330, 2nd Floor Ford Building
117 University Avenue
St Paul MN 55155

Office tel: 612/282-2274
Fax: 612/296-6599

Dear Report Recipient:

Attached for your information is a report on a study that reviewed why and how Mn/DOT should measure customer satisfaction. It resulted from secondary research conducted from April 1993 - December 1994 by Dr. Robert H. Hansen, Ph.D. (Marketing Department of the Carlson School of Management, University of Minnesota), and was commissioned as part of the customer focus portion of a strategic management process within the department.

Mn/DOT has moved significantly beyond where it was when this cautionary review was conducted with respect to making customer-based decisions. Some of this movement was the result of communication during the research process. For example:

- A department-wide task force has internally identified end user products and services to use in evaluating the effectiveness of what we deliver to our customers.
- Mn/DOT created and staffed Marketing Research units in both the Metro Division and Central Office. They have, for the past two years, been supporting our decision-making process in the following ways:
 - ▶ To determine customer/citizen needs and expectations, a customer segmentation research study has been initiated which will eventually lead to measuring the customer satisfaction of the products and services which we deliver.
 - ▶ To adapt and refine the products and services we currently deliver to our customer segments.
 - ▶ To prioritize our product and service delivery.
- The Department is developing a "Family of Measures" which will be used to learn how effective its initiatives are.
- There is currently a demonstration project in the Department which focuses on a small subset of the products & services list which will eventually link to customer expectations.

To date, the department has been successfully testing tools which link Mn/DOT's deliverables with what citizens/customers expect. In recognition of the customer feedback, changes have been implemented. We are now in the process of evaluating the impact of the changes on our customers.

Our continuing emphasis going forward will be on making decisions customer driven.

If you have any questions about this report or the follow-up implementation actions, please contact Mn/DOT's Office of Strategic Initiatives, (612)282-2271.

Sincerely,

A handwritten signature in black ink that reads "Bob Benke".

Bob Benke, Director
Office of Research Administration

Technical Report Documentation Page

1. Report No. MN/RC - 96/15	2.	3. Recipient's Accession No.	
4. Title and Subtitle DEVELOPMENT OF SCALED MEASURES OF USER AND CITIZEN SATISFACTION WITH Mn/DOT SERVICES		5. Report Date February 1996	
		6.	
7. Author(s) Robert A. Hansen, Ph.D.		8. Performing Organization Report No.	
9. Performing Organization Name and Address Marketing Department Carlson School of Management University of Minnesota 271 19th Avenue S Minneapolis MN 55455		10. Project/Task/Work Unit No.	
		11. Contract (C) or Grant (G) No. (C) 71179 TOC# 119	
12. Sponsoring Organization Name and Address Minnesota Department of Transportation 395 John Ireland Boulevard Mail Stop 330 St. Paul Minnesota, 55155		13. Type of Report and Period Covered Final Report 1993-1994	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract (Limit: 200 words) This report investigates the application of customer satisfaction concepts and measures to Minnesota Department of Transportation (Mn/DOT) operations. It defines the terms customer and customer satisfaction, estimates the cost of collecting customer satisfaction information, discusses related research and management activities, and makes recommendations. Specific research findings include the following: <ul style="list-style-type: none"> ● The measurement of customer satisfaction primarily occurs in the private sector. ● The straightforward definitions of customer and customer satisfaction can be translated to fit public sector needs. ● Specifying customers and measuring their satisfaction are deceptively difficult and require input from top management. ● Developing and implementing a customer satisfaction measurement system takes time and requires a significant financial investment. ● Initial customer satisfaction projects suffer from a higher than average failure rate, often caused by lack of planning before execution. ● Segments of the public may view design and implementation of customer satisfaction measures as wasteful, especially if the project is not successful. 			
17. Document Analysis/Descriptors Measurement techniques Customer satisfaction Customer focus		18. Availability Statement No restrictions. Document available from: National Technical Information Services, Springfield, Virginia 22161	
19. Security Class (this report) Unclassified	20. Security Class (this page) Unclassified	21. No. of Pages 74	22. Price

DEVELOPMENT OF SCALED MEASURES OF USER AND CITIZEN SATISFACTION WITH Mn/DOT SERVICES

Final Report

Prepared by

Robert A. Hansen, Ph.D.
Marketing Department
Carlson School of Management
University of Minnesota

February 1996

Published by

Minnesota Department of Transportation
Office of Research Administration
200 Ford Building Mail Stop 330
117 University Avenue
St. Paul Minnesota 55155

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views or policies of the Minnesota Department of Transportation at the time of publication. This report does not constitute a standard, specification, or regulation.

The author and the Minnesota Department of Transportation do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to this report.

ACKNOWLEDGMENTS

The author would like to acknowledge the financial support provided by the Minnesota Department of Transportation. The consistent managerial support provide by Robert Benke, Director of the Office of Research Administration, and his staff is also gratefully acknowledged.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

CHAPTER 1 - INTRODUCTION	1
Background	1
Objective	1
Report Organization	2
A Note Regarding Style	3
CHAPTER 2 - METHODOLOGY	5
Specific Research Questions	5
Research Method	5
CHAPTER 3 - MAJOR FINDINGS	7
QUESTION 1: Why Do Businesses Measure Customer Satisfaction?	7
Historical Perspective	7
QUESTION 2: How Is "Satisfaction" Operationally Defined and Measured?	9
Origin of the Word Satisfaction	9
Operational Definitions of Customer Satisfaction	9
Collecting Satisfaction Information	11
QUESTION 3: What Is an Appropriate Anchor for the Measurement of Satisfaction? That Is, Whose Satisfaction Should Be Measured?	12
Introduction	12
Consumer Market	13
Industrial Market	14
Criteria for Evaluating Classification Methods	14
The Three Factor Descriptive Method	15
Discussion of the Market Factor	16
Disaggregating the Goods Market	17
Disaggregating the People Market	19
Discussion of Informant	20
Summary	22
QUESTION 4: When the System Works, What Are the Benefits and Who Receives Them?	23
QUESTION 5: What Can Mn/DOT Learn from the Successes and Failures of Others with Regard to Measuring Satisfaction?	24
Issue # 1: Failure to Get Top Management Commitment	25
Issue # 2: Focusing on Activities as Opposed to Results	25
Issue # 3: Miscommunication Inside the Firm	25
Issue # 4: Lack of Training	25
Issue # 5: Low Threshold for Pain	26
Issue # 6: Unreasonable Expectations	26

QUESTION 6: What Are the Major Issues That Must be Addressed in Order for a Satisfaction/Dissatisfaction (S/D) System to be Successfully Implemented in a Public Sector Setting in General and at Mn/DOT in Particular?	27
Introduction	27
Theoretical Measurement Issues	27
Specification of Product and Service Attributes	28
Summary	29
Internal and External Communication Issues	30
Deciding Scope of the Initial Data Collection Effort	30
Describing the Initial Study	31
Internal Communication Strategies	31
External Communication Strategy	32
Step # 1	32
Step # 2	33
Step # 3	33
Step # 4	33
Summary	33
CHAPTER 4 - RECOMMENDATIONS	35
Policy Recommendations	35
Research Recommendations	35
Market Definition Study	35
Satisfaction Measurement Study	36
REFERENCES	37
APPENDIX A Selected References Related to the Measurement of Satisfaction	
APPENDIX B Selected References Related to Public Sector Management and the Measurement of Efficiency and Effectiveness	
APPENDIX C Sample Formats for Satisfaction Questions	
APPENDIX D Selected References Related to Experiences with Quality and Satisfaction Programs	

LIST OF FIGURES

Figure 1. Segmentation Variables for Commercial Markets	18
Figure 2. Segmentation Variables for Consumer Markets	19
Figure 3. Stakeholder Map for a Government	21

EXECUTIVE SUMMARY

This report provides senior management of Mn/DOT with an introduction to a number of issues and topics related to the broad subject of customer satisfaction. Topics covered include: defining the terms customer and customer satisfaction, estimating the cost of collecting customer satisfaction information, and a discussion of the research and management activities that must precede any customer satisfaction measurement project. The report also presents a set of specific actions that top management at Mn/DOT can take to increase the likelihood of success in any specific form of customer satisfaction measurement project.

Specific research findings of this project are as follows:

1. The measurement of customer satisfaction is primarily a private sector process.
2. The straightforward definitions of customer and customer satisfaction can be translated to fit a public sector setting.
3. The specification of customer and the measurement of satisfaction are deceptively difficult tasks which require input from top management.
4. The process of developing and implementing a customer satisfaction measurement system is expensive and time consuming.
 - a. A simple user or driver survey may take two to three months from inception to execution and cost between \$5,000 to 15,000.
 - b. A simple initial phase customer satisfaction project, in contrast, will likely take from 18 to 30 months to design and implement at a cost of from \$150,000 to 300,000.
 - c. A full scale customer satisfaction measurement system will likely cost between one to two million dollars to implement per year.
5. Initial customer satisfaction measurement projects suffer from a higher than average failure rate which is often caused by a lack of planning prior to project implementation (the classic problem of "ready - fire - aim").
6. The design and implementation of any customer satisfaction measurement activity by any public sector agency could be viewed as wasteful and self serving by citizens and by watch dog or public action groups (especially if the initial project was not successful).

The course of action suggested for Mn/DOT includes the following specific activities:

1. Invest the necessary top management time to develop an agency wide set of definitions of the customers for Mn/DOT's products and services.
2. Select one or two customer or product groups, and begin the process of determining what customers expect from one or two specific Mn/DOT products or services that they use.
3. Design and implement other research projects to help increase the agency's understanding of the critical issues related to the development of a customer satisfaction measurement system and the interpretation of the customer satisfaction measures. An initial list of critical research questions includes the following:
 - a. How do Mn/DOT customers, in a general sense, set their expectations?
 - b. How do they determine expectations for specific products and services delivered by Mn/DOT?
 - c. What process do they use to evaluate products or services? and
 - d. What is the impact or effect of Mn/DOT's short term or episodic task performance on customer's overall satisfaction with an individual product or service and their overall satisfaction with Mn/DOT in general?

When these projects are completed, senior management will have the critical information needed to make enlightened and defensible decisions regarding the collection of input from customers to help make decision regarding service delivery. Failure to implement these critical managerial, and research-based actions will increase the likelihood that **any** customer satisfaction measurement project will fail to produce useful or action oriented results. This, in turn, will provide ammunition for any watch dog group or adversary who seeks to discredit Mn/DOT's efforts to adopt a market-based planning process.

Implementing these and other specific actions mentioned in the report will help insure that the agency is making enlightened and defensible decisions regarding the collection of customer input to aid the agency in its attempt to implement a more market-based planning process. This market based planning process input may or may not include the collection of actual customer satisfaction data.

CHAPTER 1

INTRODUCTION

Background

In the Fall of 1991, the Minnesota Department of Transportation (Mn/DOT) began a major initiative to implement a new strategic management process within the agency. The research described in this report was commissioned as part of this ongoing strategic management initiative.

A brief review of the history of this initiative is critical to gaining an understanding of the specific research questions addressed in this project.

One important historic event was the formation of the new committee called the Strategic Management Committee (SMC). This committee included top and mid-level managers from throughout the organization. The SMC met monthly to discuss issues related to the design and implementation of the new Strategic Management Process.

Another important event was the formation of an Office of Strategic Initiatives (OSI), which was essentially a team of internal consultants. One of the principal functions of OSI was to provide advice and counsel to the SMC as they worked to implement the major changes involved with the new Strategic Management Process. Members of OSI were selected based on their broad base of private sector experience with issues related to strategic management.

OSI provided staff assistance to members of the SMC in a number of settings and they also staffed the individual SMC monthly meetings. Over the course of the first year of SMC meetings, a number of critical issues related to the use of customer input as an integral part of the new strategic planning process surfaced. SMC members raised questions regarding the specification of the agency's "customer" and how to measure their "customer" satisfaction. In addition, SMC members had questions regarding how to design and implement a satisfaction measurement system for the agency.

Objective

The Office of Strategic Initiatives, in consultation with members of the SMC, commissioned this research designed to help Mn/DOT make an **enlightened and defensible decision** regarding whether or not to implement a satisfaction/dissatisfaction measurement system. There are several

prerequisites to making this major decision. First, a specific definition of exactly what is involved with the measurement of satisfaction (what is it and how do you measure it) must be given. Second, there must be a listing of the major categories of cost associated with the measurement of satisfaction, as well as a documentation of the potential benefits which should result if the organization invests the money and successfully measures satisfaction. The final prerequisite for making an enlightened and defensible decision involves the specification of the major categories of risk associated with designing, implementing and testing a satisfaction measurement system.

Report Organization

This report presents information that senior management at Mn/DOT may use to help evaluate the applicability of **customer** satisfaction measurement concepts to the measurement of **citizen** satisfaction with the products and services provided by Mn/DOT. Throughout the first four chapters of the report, the term customer is used to imply a private sector measurement situation, while the term citizen implies a public sector measurement setting. In particular, the report will allow senior managers to make an enlightened and defensible decision regarding whether or not the agency should design and implement a statewide citizen satisfaction and dissatisfaction (CS/D) measurement system.

The report includes a review of the satisfaction concept including both dictionary and operational definitions, and methods used to measure satisfaction. This review of the satisfaction concept and its measurement is necessary before top management can decide whether or not to develop a satisfaction measurement system and how that development should proceed. The review process must provide answers to the following questions. First, in what ways does customer satisfaction measurement used by the private sector differ from the processes used in the public sector to collect citizen input? Secondly, how can these basic satisfaction measurement concepts related to the measurement of satisfaction be applied in a public sector setting? Next, the report presents criteria which can be used to evaluate any framework used to describe a specific public sector setting where satisfaction and dissatisfaction information could be collected. This section of the report also presents one classification framework which can be used to describe citizen satisfaction measurement settings that is consistent with this set of criteria. This information is necessary to help senior management at Mn/DOT begin the process of defining the parameters of a citizen satisfaction

measurement system.

The report next presents a managerial (as opposed to theoretical) framework that senior management at Mn/DOT can use to begin the process of evaluating whether or not to measure citizen satisfaction on an agency wide basis. The final section of the report presents recommended next steps that the agency should take both in the theoretical conceptual area of defining citizen satisfaction and in the more practical, pragmatic area of collecting other forms of citizen input.

A Note Regarding Style

The majority of this report is written in the traditional or formal writing style, using the third person. There are exceptions and they include those passages in the report which are opinion based. These passages are written in the less formal first person style. This was done to help separate research fact from researcher opinion.

CHAPTER 2

METHODOLOGY

Specific Research Questions

In order to provide senior management with a more systematic presentation of information, the list of decision making prerequisites presented earlier was transformed into the following six specific research questions:

1. Why is "satisfaction" measured in the private sector?
2. How is satisfaction operationally defined and measured?
3. What is an appropriate anchor for the measurement of satisfaction in the private sector?
Whose satisfaction should be measured?
4. When a satisfaction measurement system is designed that works; what are the benefits and who receives them?
5. What can Mn/DOT learn from the successes and failures of others with regard to measuring satisfaction?
6. What are the major issues that would have to be addressed in order for Mn/DOT to move forward in the area of measuring satisfaction on an agency wide basis?

Research Method

The research was conducted from September 1993 to March 1995. Three separate exploratory research methods were employed to gather the information necessary to answer the research questions. [7] These included a literature review of articles, monographs, textbooks and texts of speeches on topics central and tangentially related to the broad areas of satisfaction measurement and the implementation of measurement systems. Published sources dealt with these issues in the context of both private sector and public sector settings.

The second research method was the use of unstructured one on one informational interviews which were conducted by the principal researcher to help answer a number of the issues related to implementation and testing of measurement systems. These informal discussions were conducted with private sector managers involved in the measurement of satisfaction, research vendors who

provide satisfaction measurement services to private and public sector clients, and university faculty engaged in research in the broad area of satisfaction measurement.

The third exploratory research technique used was an informal review and analysis of selected situations (cases) inside Mn/DOT. Often part of the analysis of selected case situations included the review of major reports dealing with topics related to strategy, planning and marketing research. Some of these reports were prepared by Mn/DOT managers or teams or committees comprised of Mn/DOT employees. In other instances, the reports were prepared by outside consultants and vendors in response to specific requests made by Mn/DOT managers.

The primary purpose of this document review was to assess Mn/DOT's readiness or ability to design, implement and test a satisfaction measurement system.

CHAPTER 3

MAJOR FINDINGS

QUESTION 1: WHY DO BUSINESSES MEASURE CUSTOMER SATISFACTION?

Businesses want to establish long term mutually beneficial relationships with their customers. They measure customer satisfaction because it is believed that a satisfied customer is more likely (than a dissatisfied customer) to continue to purchase products and services. As long as the business provides satisfaction to its customers **and** meets its own goals and objectives, this mutually beneficial relationship will exist.

Historical Perspective

The notion of providing customer service has been documented in retail trade publications dating back to the mid to late 1800's. [Charsky and Steinberg, 6] These early writings provided helpful hints and suggestions for how to provide shoppers with services that would help turn them into loyal repeat customers. More recently, customer service issues have been researched by practitioners and academics in a number of broad areas. Three of these are briefly noted: logistics, marketing, and quality. The interested reader can read more about these individual perspectives by going to the sources referenced or by turning to the expanded bibliography of articles and texts on the subject of satisfaction presented in Appendix A.

From a logistics perspective, customer service is defined as "a process for providing significant value-added benefits to the supply chain in a cost-effective way." [See for example 2, 21, 22] From a marketing perspective, issues related to providing customer service follow from the marketing concept which states that all business activity should be directed toward finding out what the customer wants and then finding a way to satisfy those wants. [See for example 1, 20] The same message is found in the quality literature where quality is defined by Crosby [8] as determining customer wants and decreasing variation in produced products.

As Hauser, Simester and Wernerfelt note:

"Many in the literature are careful to distinguish satisfaction (post consumption experience) from quality (characteristics of the product or service) and from value (a notion of quality net of price)." [16, p. 330]

While it is true that much of the early writings on how to provide service to gain satisfaction appeared in private sector or business publications, the concept of providing satisfaction as a goal is not just a private sector concept. Support for the same basic premise is found in early writings regarding the public sector. Consider, for example, this quotation from 1945.

"The people reign in the American political world as the Deity does in the Universe. They are the cause and aim of all things; everything comes from them and is absorbed by them." [31, p. 59]

A similar point was made by McClendon [24] as he commented about the politics of customer service and in particular the shifting from representative to participatory and collaborative democracy:

Costis Toregas, president of Public Technology, Inc. (PTI), contends that a truly "customer" orientation, as is the rage now in the private sector, has in fact been recognized in democracy as an institution for many years. The problem is that as cities have grown in size many local government institutions have not been able to figure out how to continue to be responsive to the electorate. As cities and counties grow larger, says Toregas, as organizational structure gets more complex, and as budgets are strained, one might see a growing rift between the governed and those who control the apparatus of governance. Arithmetic alone plays some vicious games with the ability of anyone to understand, let alone react to the needs of a community. When you have thousands of residents, all with differing needs, cultural backgrounds, and expectations, it is not easy to hear and "represent" their needs. [33]

The point is, that providing satisfaction is or at least should be the principal aim of all enterprise, both public and private. Presented in this light, satisfaction can be seen as a means to an end, as in the private sector, or it can be seen as the desired end result as the public sector quotes suggest. Appendix B contains a number of references pertaining to the measurement of efficiency and effectiveness in the public sector.

QUESTION 2: HOW IS "SATISFACTION" OPERATIONALLY DEFINED AND MEASURED?

This question may seem unimportant because the answer seem to be obvious. You ask the customers or citizens to tell you how satisfied they are with the existing products or services that they purchase or receive. In reality, the situation is much more complicated than this example suggests. Anyone can, of course, ask a person to evaluate a product or service. Whether or not you have measured satisfaction is quite another issue. In order to understand this apparent contradiction we need to briefly review the history of the measurement of customer satisfaction and then present some precise definitions of terms to help define satisfaction and dissatisfaction.

The following sections address three of the basic issues related to the measurement of customer satisfaction and dissatisfaction (CS/D). These include providing a dictionary definition of the term satisfaction, an operational definition of customer satisfaction and dissatisfaction and finally describing some of the methods that can be used to "ask the questions" which are used to collect satisfaction information.

Origin of the Word Satisfaction

The word satisfaction comes from the Latin words *satis* (enough) and *facere* (to do or make). [34] These words suggest the true meaning of satisfaction, which is fulfillment. In order to measure fulfillment you have to measure what customers expect to receive and how they evaluate what they received in comparison to what they expected to receive. This is consistent with the separation of satisfaction from the related concepts of quality and value. [16]

The next step is to provide a specific set of operations that will be used to define the term satisfaction.

Operational Definitions of Customer Satisfaction

Since its emergence as a legitimate field of inquiry in the early 1970's, one particular operational definition or paradigm of CS/D has dominated the literature. This paradigm is called the expectations-disconfirmation model. As the following description taken from Erevelles and Leavitt

[13] suggests, the model is logical and it seems to accurately describe not only what satisfaction is but also how and why it occurs.

According to this paradigm, consumers are believed to form expectations about a product prior to purchasing the product. [Oliver, 26] The notion of consumers forming expectations is derived from expectancy theory [Tolman, 32] and is generally defined as a consumers' beliefs that a product has certain desired attributes. Subsequent post-purchase usage then reveals to the consumer the actual performance of the product. The consumer then compares this post-purchase evaluation with the expectations held prior to purchase. If the product performed better than expected (perceived actual performance > expected performance), positive disconfirmation is expected to occur. This leads to consumer satisfaction, and strengthens consumers' beliefs, attitudes and future purchase intentions. If however, in the consumers' evaluation, the product performs worse than expected (perceived actual performance < expected performance), negative disconfirmation occurs. This may weaken future dispositions towards purchasing the product, and the consumer may search for other products. [Engel, Blackwell and Miniard, 9] If the product performs as expected (perceived actual performance = expected performance), the judgment of the consumer is labeled "simple confirmation." [Oliver and DeSarbo, 27]

The theoretical concepts of simple confirmation, positive and negative disconfirmation can be illustrated using an example. Suppose that you purchase a pair of leather work gloves that you plan to use to work in the garden. Further assume that you expect the gloves to protect your hands from cuts from thorns while pruning rose bushes; they will be easy to slip on and off and they will last (not wear out) for three years. This description listed the three attributes that you used to evaluate gloves and provides a description of how you expect the gloves to perform.

In an actual post consumption or satisfaction setting, the gloves last for five years and retain their ability to be slipped on and off with ease. However, they do not protect your hands from being cut by thorns. With this additional performance information, we now can infer satisfaction, using the confirmation-disconfirmation information presented earlier. Because the gloves were easy to slip on and off, you infer simple confirmation on this attribute. The gloves lasted longer than you expected, so this is an example of a positive disconfirmation. The gloves did not protect you from the thorns, so this is a negative disconfirmation. In practice, then, you would be satisfied with ease

of use, dissatisfied with protection and delighted with wearability.

Collecting Satisfaction Information

Even though the operational definition of satisfaction is straightforward, the actual writing of the questions used to collect this information can be accomplished in a number of ways. The purpose in this discussion is to familiarize the reader with the variety of methods available to collect the information and suggest where to look for assistance to evaluate the methods. To facilitate this task, the report contains a sample of the types of question formats that have been used in satisfaction research. This material, which includes a taxonomy of measurement methods as well as actual examples of questioning methods, is presented in Appendix C.

The taxonomy of measuring methods used for this presentation was developed by Hausknecht [17] and it includes two dimensions; what is measured and how it is measured. The three categories of what is being measured include cognitive, affective and conative aspects of satisfaction. Cognitive questions relate to how a person evaluates something. Affective questions measure emotional components or emotional reactions. Conative questions refer to behavior or action. In lay-person terminology; what is measured is either how a person thinks, how they feel or what action they may take. [9] The second dimension, that is, how something is measured, includes verbal or graphic formats.

The customer satisfaction literature is diverse and large and a manager interested in measuring satisfaction does not have to invent his/her own method for a particular study. Hausknecht says it best in the following advice to researchers. "The researcher in search of an appropriate scale (to measure satisfaction) is well advised to begin with this list and (read) the competitive reviews cited above (in the article). There should be little need to develop additional measures." [17, p. 3]

QUESTION 3: WHAT IS AN APPROPRIATE ANCHOR FOR THE MEASUREMENT OF SATISFACTION? THAT IS, WHOSE SATISFACTION SHOULD BE MEASURED?

Introduction

As noted earlier, the concept of satisfaction can be measured in a very straightforward manner. That is, satisfaction can be measured by asking people to compare either implicitly or explicitly their expectation and their perception of actual delivery of a particular product or service. The simplicity of the definition, however, hides the fact that the measurement process itself is very complicated. The complexity is involved with defining what I call the satisfaction measurement setting. The satisfaction measurement setting actually describes or provides answers to the following multi-part question: who is providing satisfaction information about what particular product or service, and whose satisfaction is measured?

This section discusses the satisfaction measurement setting and the impact the complexity of the setting has on the collection of satisfaction data. This is followed by a discussion of the need to develop a framework to describe and define the satisfaction measurement setting. Next a set of criteria is presented that can be used to evaluate any proposed framework for describing and defining the satisfaction measurement settings. The final section of the chapter presents a three-factor method for describing satisfaction settings. This three-factor method is shown to satisfy these evaluative criteria and to offer promise as a method to be used by Mn/DOT.

In order to illustrate the complexity, I developed an example and used that example throughout this chapter of the report. The product that I used in the example is the Post-it brand notes produced by 3M company. This product was selected because it is a simple product and it is a product used by individuals in their homes and by other individuals at work. Therefore, it may be thought of as a consumer product and also as a commercial or industrial product. [1, 20] The satisfaction measurement setting is now defined for the Post-it note as a consumer product and also as an industrial product.

Consumer Market

The most obvious definition of "customer" may be the actual user of the note, however, even this simple definition can be expanded to include both the sender and receiver as being users of the note.

Other individuals could also be included in this definition of "customer;" based on their involvement in the actual purchase of the Post-it notes. For example, someone decided they needed the notes, someone shopped for the notes, someone decided to buy Post-it brand notes, someone actually purchased the product and someone also paid for the Post-it notes. This just begins to demonstrate the complexity of defining the satisfaction measurement setting.

In many situations, all of these purchasing roles are performed by the same person. However, as many market researchers have discovered, these roles are often filled by more than one person within, for example, a household. Oftentimes market researchers have collected information from one person while failing to contact and collect information from others who are involved as members of the buying process. [1, 9, 20] As a result, these researchers have erroneously concluded that, for example, the customer is satisfied with the product based solely on input from people who used the product. In reality, had they contacted the person who paid for the product, they would have realized that this person was not satisfied with the product because of the cost.

What this example demonstrates is that the term customer is really an umbrella term used to define a number of different customer "roles" performed by one or more different people. In order to accurately measure satisfaction, researchers must be more specific in defining "whose satisfaction" they are going to measure.

The situation becomes even more complex when you begin to consider the other groups of individuals who, while not end-user customers for the product, are involved in providing satisfaction to the end-user customer. The product must be available to purchase at a store; so clearly store personnel as well as individuals in the transporting business (who may work for the store or for 3M) are involved in providing satisfaction. And, as many companies including 3M have found out, you must keep those people satisfied in order to insure that the end-user of the product is satisfied.

Industrial Market

The process of expanding the definition of "customer" must be performed for the industrial setting as well. Just as there are multiple groups of individual consumers, for example home makers or students who could use this product; there are also a wide variety of different commercial settings where the product could be used. The specific example used here involves a civil engineer working for a consulting engineering firm. So, the actual end-user customer would be the individual civil engineer.

Some of the other individuals involved in the buying process could include the purchasing department, the department administrator, the engineers, secretaries, as well as the owner of the firm or individuals with equity interest in this consulting engineering service firm. The product could actually be purchased in any number of different ways, including the following three examples. A sales representative of a large office supply company could sell the product directly to the individual consulting engineer or indirectly by selling to a secretary or assistant or to a member of the purchasing department if the engineer works for a large firm. Alternatively, if the engineer works for a relatively small firm, then he/she may shop directly at the office supply store. These, however, are just examples and in reality many other alternatives exist. Once again, if 3M is interested in measuring satisfaction, they would have to take the time and be very specific with regard to whose satisfaction information they would collect.

Criteria for Evaluating Classification Methods

The previous examples demonstrate the complexity of the issues involved in defining and describing the measurement setting. The relatively simple task of measuring satisfaction with Post-it notes quickly expands into a study of buyer behavior, the modeling of both the buying and usage processes as well as issues related to the study of channels of distribution. Clearly before any manager (public or private sector) can begin to collect satisfaction data, he/she must first specify the factors that can be used to define and describe the magnitude of the measurement task. Only then can that manager make an enlightened and defensible decision regarding whose satisfaction to measure.

In order to do this, management needs to develop a classification method or scheme to help guide

their planning process. In my review of published studies and reports I did not find a consistent pattern or framework used to define and describe measurement settings. What I did find was anecdotal information regarding this process. I combined this information with basic information from the business strategy and marketing literature to prepare a set of criteria to use in selecting a method to describe measurement settings. These six criteria are presented below:

1. All definitions of terms and concepts should be consistent with those mentioned in existing mission and vision statements and other planning documents prepared by the organization.
2. The definitions should allow for a logical aggregation and disaggregation process. That is, you should be able to add or subtract elements of the setting without having to change the basic describers.
3. These basic definitions must make sense to those responsible for making decisions within the organization. They should make sense without the need for detailed explanation and "teaching or training."
4. If possible, the factors and measures used should make use of existing secondary data sources.
5. In addition, if initial data were needed; it would be easy to collect.
6. All measuring and defining activity must be able to withstand the scrutiny of those interested in monitoring what the government is doing. It is not sufficient that the process make sense to those within the agency; the process must make sense when described or explained to outsiders.

The next section of the report describes one method for describing and defining the measurement setting that is consistent with these criteria and could be used by the agency to help frame the measurement task.

The Three Factor Descriptive Method

The satisfaction measurement setting can be described from the collector/questioner's perspective or from the respondent's perspective. The following three factor description is offered as a way to classify measurement settings from the responder's perspective. This will allow management to describe the measurement task based on what would have to be collected in order to "measure citizen satisfaction." (The other perspective is discussed in the recommendations section regarding where

to start the data collection effort based on the collector's perspective.)

The three factor description is derived from evaluating research reports and noting the variety of issues studied under the broad topic of satisfaction measurement. The three factors are **market**, **informant** and **focus**. Each of these three factors is discussed briefly below in the context of the Post-it example. This is followed by a more detailed discussion of the market and informant factors.

The Post-it example illustrated the concepts of consumer and industrial markets. In addition, the informant factor was illustrated by referencing the variety of individuals who could provide satisfaction information to a company. The third factor, the focus factor, describes the nature of the questions being asked. As a general rule, satisfaction questions focus on one of two broad types of issues. The first is satisfaction with services provided. The second is satisfaction with the degree to which particular needs are satisfied. While both of these measurement activities define satisfaction, the focus in the former is clearly on a particular product or service whereas the focus on the latter situation is on the person and it does not necessarily deal with any products or services. When the focus of the questioning is directed to the person, it identifies new product opportunities.

Discussion of the Market Factor

The term **market** is used to describe an aggregation or grouping of individual persons, businesses, industries, etc. The term **market** should not be confused with the phrase **market process** which can be used to describe how needs are met. This subject is discussed in the first three chapters of a book edited by Whicker and Areson [35]. Used in this way, the term **market** is used to describe the scope of activity or responsibility. This grouping or aggregation is done to facilitate planning and since planning is, by definition, an evolutionary process, the method or methods used to aggregate may of necessity change over time.

I reviewed existing Mn/DOT planning documents, existing market research studies and available data bases to determine an efficient and effective way to set initial definitions of Mn/DOT's markets. A review of a number of planning documents produced a consistent theme that Mn/DOT's mission involved "facilitating the movement of people and goods to, through and throughout Minnesota." The wisdom of this early separation of people and goods suggests that past planning efforts have acknowledged the **different requirements** of facilitating the movement of people and goods.

For purposes of the initial market definition, I recommend that **goods** and **people** be considered

broad markets and that each of these broad markets consists of **specific markets** and that each of these specific markets can be further divided into **segments of specific markets**. Just as the term market can cause difficulty when used in a public sector setting; so too can the process of market segmentation if it is not understood. This is because in the private sector markets are segmented as a first step to help business to decide which segments offer the greatest and least profit potential. The concept of profit does not fit in a public sector setting. As a result, some well intentioned public sector managers refuse to consider using the concept of segmentation. Presumably this is because they think that this would be the first step toward eliminating less desirable or "high cost to serve" segments of the market. This would seem to be an overreaction as segmentation is used by nonprofit enterprises to improve the effectiveness and the efficiency of product and service delivery systems. [1, 9, 20] Simply stated, segmentation is not the first step to eliminating certain groups from receiving services.

Disaggregating the Goods Market

For purposes of starting to identify markets as part of the planning process, Mn/DOT could use the standard industrial classification code or SIC code to define individual goods markets. This method has a number of desirable features. First, data have already been collected by both federal and state agencies as well as by private firms. Second, this classification system was designed to be used by economists and other public sector managers as a way to study public policy implications of business decision making. The SIC code is also widely used in the private sector by a wide range of companies who sell to markets other than the individual consumer (industrial marketers, institution marketers, etc.). The interested reader is referred to Haas [15] for a more detailed description of the SIC Code. Each of these individual SIC code industries can further be disaggregated or segmented by using demographic describers. Figure 1 presents a listing of the variables commonly used to form segments of industrial, organizational or goods markets. [1, p. 243]

MAIN DIMENSION	SEGMENTATION VARIABLE	TYPICAL BREAKDOWNS
CUSTOMER CHARACTERISTICS		
Geographic	Region	Pacific; Mountain; West North Central; West South Central; East North Central; East South Central; South Atlantic; Middle Atlantic; New England
	City or Metropolitan statistical area (MSA) size Density Climate	Under 5,000; 5,000 to 19,999; 20,000 to 49,999; 50,000 to 99,999; 100,000 to 249,999; 250,000 to 499,999; 500,000 to 999,999; 1,000,000 to 3,999,999; 4,000,000 or over Urban; suburban; rural Northern; Southern
Demographic	Age	Infant, under 6; 6 to 11; 12 to 17; 18 to 24; 25 to 34; 35 to 49; 50 to 64; 65 to over
	Sex	Male; female
	Family size	1 to 2; 3 to 4; 5 or over
	Stage of family life cycle	Young single; young married, no children; young married, youngest child under 6; young married, youngest child 6 or older; older married, with children; older married, no children under 18; older single; other older married, no children under 18
	Ages of children	No child under 18; youngest child 6 to 17; youngest child under 6
	Children under 18	0; 1; more than 1
	Income	Under \$5,000; \$5,000 to \$14,999; \$15,000 to \$24,999; \$25,000 to \$34,999; \$35,000 to \$49,999; \$50,000 or over
	Education	Grade school or less; some high school; high school graduate; some college; college graduate
Psychographic	Race	Asian; African-American; Hispanic; white; other
	Home ownership	Own home; rent home
Psychographic	Personality	Gregarious; compulsive; extroverted; aggressive; ambitious
	Lifestyle	Use of one's time; values and importance; beliefs
BUYING SITUATIONS		
Benefits sought	Product features Needs	Situation specific; general Quality; service; economy
Usage	Rate of use User states	Light user; medium user; heavy user Nonuser; ex-user; prospect; first-time user; regular user
Awareness and Intentions	Readiness to buy Brand familiarity	Unaware; aware; informed; interested; intending to buy Insistence; preference; recognition; nonrecognition; rejection
Buying condition	Type of buying activity Kind of store	Minimum effort buying; comparison buying; special effort buying Convenience; wide breadth; specialty

Figure 1. Segmentation Variables for Commercial Markets

Disaggregating the People Market

In searching for a reasonable procedure to use for defining people markets, I identified a similar two step process. The two step process for the people market includes the specification of individual markets using a standard customer classification code or SCC. These customer code categories involve identifying the type of trip that is involved. In my research, I identified a number of trip classification codes and one classification code seemed to predominate. That is the one that was presented in the most recent version of The Statewide Transportation Plan, prepared by the department. The resulting categories of general trip types include: home based -work, home base - other, and non home based trips. Under this classification scheme, a market is really a trip type (just as we had a type of good before) and these individual trip type markets could then be segmented using the segmentation bases used to segment consumer markets. One listing of the most common consumer market segmentation bases is presented in Figure 2. [1, p. 237]

MAIN DIMENSION	SEGMENTATION VARIABLE	TYPICAL BREAKDOWNS
CUSTOMER CHARACTERISTICS		
Geographical	Region	Pacific; Mountain; West North Central; West South Central; East North Central; East South Central; South Atlantic; Middle Atlantic; New England In MSA; not in MSA
	Location	
Demographic	SIC code	2-digit; 3-digit; 4-digit categories
	Number of employees	1 to 19; 20 to 99; 100 to 249; 250 or over
	Number of production workers	1 to 19; 20 to 99; 100 to 249; 250 or over
	Annual sales volume	Less than \$1 million; \$1 million to \$10 million; \$10 million to \$100 million; over \$100 million
	Number of establishments	With 1 to 19 employees; with 20 or more employees
BUYING SITUATIONS		
Nature of good	Kind	Product or service Installation; component of final product; supplies Office use; limited production use; heavy production use
	Where used	
	Application	
Buying condition	Purchase location	Centralized; decentralized Individual buyer; group New buy; modified rebuy; straight rebuy
	Who buys	
	Type of buy	

Figure 2. Segmentation Variables for Consumer Markets

It is important to note that the specific sequence of steps to go from broad market to specific market and then segment of specific market could be done in the reverse order from that specified above. That is, the broad market could be broken into specific markets using demographic descriptors or other segmentation bases presented in the Figures 1 and 2 and then these specific markets could be segmented by using SIC codes for the goods market and SCC codes in the people market.

Based on past experience, it seems to make more sense to use the first method, however, that will be empirically determined by the organization as it works to develop this measurement system.

The broad market-specific market-segments of specific markets methodology has a number of desirable characteristics. It is relatively inexpensive to implement because the specific market descriptors and the market segmentation bases (Figures 1 and 2) are available as secondary data sources. Second, implementation of this market description and segmentation methodology will provide a solid foundation for more sophisticated methodologies without the need to pre-specify the exact nature of that methodology. Third, the entire process is similar to the processes used by private sector and not for profit entities. These characteristics should be readily discernible to any outside evaluator who is looking at and evaluating Mn/DOT's early market definition and segmentation efforts and the amount of money allocated to these activities.

Discussion of Informant

I reviewed a number of different frameworks for identifying the variety of people who could be called upon to provide satisfaction information. Three of the concepts that I explored include customer, stakeholder and agent.

The concept of customer is relatively straightforward. However, as noted earlier, even when you talk about a customer, you really could be talking about a number of different people who are involved in various aspects of evaluating, purchasing, paying for and using a particular product or service. So clearly one way to define the focus would be to identify all of those people who are involved in what marketing people refer to as a buying process for a consumer good or a buying center for an industrial product. [1, 9, 20]

What this review suggested is that the term "customer" is not specific enough. When you begin to expand the definition of customer, you need to have a specific framework to insure that you don't

overlook important individuals who are somehow involved with or touched by the product or service in question. The traditional marketing approach to expanding the definition of customer by talking about buying process or buying center is really only a first step toward identifying the people who should have satisfaction input with regard to product or service or an unmet need. In a similar manner in the public sector, the term citizen fails to provide the necessary specificity to be useful as a concept to define whose satisfaction to measure.

In attempting to expand the list of people who should be providing satisfaction input, I reviewed two additional literatures beyond the marketing literature. I looked at the strategic management and policy literatures in both the public and private settings. As a result of this review, I identified two other conceptual frameworks to help identify "whose satisfaction should be measured." These concepts are the stakeholder and the agency concepts. Stakeholder is defined as any person or group who can affect your ability to accomplish your goals and/or any person or group who can be affected if you accomplish your goals. [4, 14] Figure 3 comes from a textbook by Bryson [4, pg. 102] and shows the broad range of potential groups who could be stakeholders regarding any particular product or service or issue.

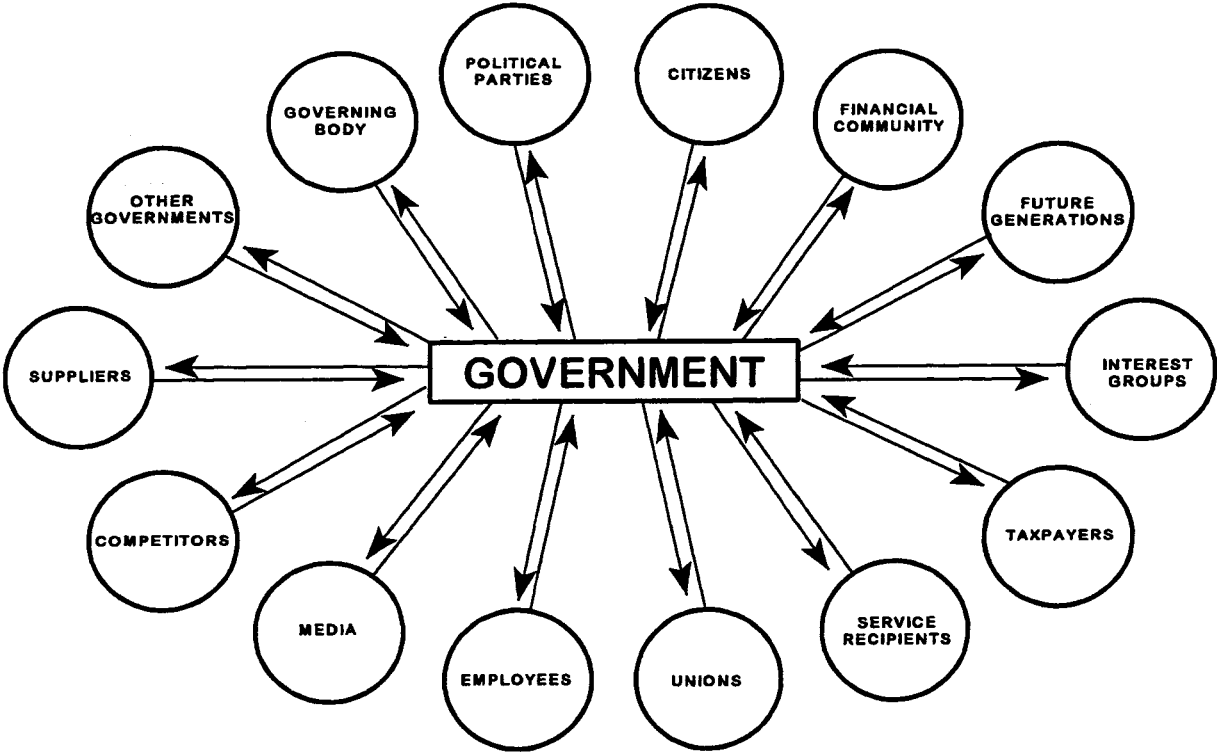


Figure 3. Stakeholder Map for a Government

The agency concept is similar to the stakeholder concept. The difference is that an agent is someone who works on behalf of someone else. [1, 9, 20] Theoretically then, any stakeholder could have an agent who would represent their interests and so the Bryson diagram could be expanded and you could put an agent working for any of the groups on the diagram. The difficulty with the stakeholder and agent concepts is that if you relax the criterion for potential to be affected, then, literally **everybody and everything could be a stakeholder or an agent**. So all of the basic concepts; customer citizen, stakeholder and agent, **lack the required level of specificity** to be used to help answer the question of "**whose satisfaction to measure.**"

One way to add the needed specificity to these broad terms would be to focus on the specific role a citizen or stakeholder plays with regard to a particular product or service provided by Mn/DOT.

One pair of role-based terms that seems to make sense in a public sector setting is user and beneficiary. User and beneficiary could further be categorized as being either primary or secondary based on their level of importance or involvement with the specific product or service in question.

The use of these terms, which are by definition quite broad, would allow the agency to collect information from widely different groups of people where the specification of the group would be dependent upon the product or service in question. The specification of primary and secondary level of importance also increases the flexibility of the measurement system. It is not meant to imply that you have to collect input from four different groups. You may, for example, collect information from a beneficiary who is involved only at a secondary level. In other situations, you might collect information from as many as ten or twenty groups of people. This method of describing whose importance is measured combines elements of both public and private sector planning approaches and it provides the flexibility required by an organization as diverse as Mn/DOT. In addition, this method can be expanded to include new products or services that the agency might bring out for new groups of citizens.

Summary

This three-factor classification scheme is based on standard concepts from both the public sector and private sector management literatures. There is an explicit fourth factor which consists of attributes used for evaluation. Attributes used for product or service evaluation are discussed later in the report. It allows Mn/DOT management to build a model that would describe the enormity of

the measurement task that they face. Because of its component like structure, it is also possible to undertake a very specific measurement activity even though it does not cover the totality of the measurement task. The system allows the manager responsible for the product or service or market in question to define the parameters of the individual study. At the same time, individual proposed studies could be reviewed by top management at Mn/DOT to make certain that the study is consistent with or fits into the big picture measurement situation that the agency faces.

QUESTION 4: WHEN THE SYSTEM WORKS, WHAT ARE THE BENEFITS AND WHO RECEIVES THEM?

Numerous private sector companies have invested large amounts of time and money to develop complex systems of measurement that are referred to as customer satisfaction/dissatisfaction (CS/D) systems. Initially these huge systems were developed on the **implied belief** that a satisfied customer would be a long term customer and that longer term customers lead to increased performance of the enterprise. Recently, however, more and more companies are looking to cost justify the huge investments in these CS/D systems. As a result of this increased need to justify the cost of the system, managers have begun to document the true benefits attributable to the development and implementation of such systems. The major benefits which are now documented to arise from such systems include the following:

- a. The measurement process leads to good will on the part of the customer.
- b. Results of satisfaction measurement can often be used by managers to identify new product or new market opportunities.
- c. The satisfaction measures themselves can be used to monitor the overall performance of an enterprise.

Given that these are the benefits that can be derived from measuring satisfaction, it would be logical to ask how much does it cost and how long does it take to get the benefits?

In my review of the literature, I found very few specific references to answer the questions about cost and time. I think that the main reason for this is that answers to both the time and the cost questions depend on the specifics of the measurement activity. Because companies compete, they do not want to spell out in detail what they do, how they do it, and how much it costs. In private

conversations with managers responsible for satisfaction projects, I was able to obtain the following anecdotal information.

A typical first phase customer satisfaction measurement project is likely to cost between \$150,000 to \$300,000 to design and implement. In addition, a sustained multi-product, multi-market customer satisfaction measurement system can cost from one to three million dollars per year to implement.

With regard to time, the general theme is that these are long term projects. The projects tend to be sequential in nature and it can take anywhere from one to three years to get the initial study implemented. In addition, I noted that companies with a reputation for being pioneers in the area of satisfaction measurement (i.e., companies collecting information for ten or more years) are still making changes and still expanding and improving their satisfaction and measurement activities. In summary, I found that satisfaction measurement systems are costly and take a long time to develop and implement.

It is important to note, that knowledgeable managers with experience in measuring satisfaction feel that the process creates value for their firms, i.e., the benefits exceed the cost. As one senior executive told me, the cost of the system is not the only important cost. The other important cost to consider is what you would lose if you made decisions without information from your customers concerning what they want and information about how they value you and the competition.

QUESTION 5: WHAT CAN Mn/DOT LEARN FROM THE SUCCESSES AND FAILURES OF OTHERS WITH REGARD TO MEASURING SATISFACTION?

This primarily private sector process can be and in fact, has been, used by public sector agencies and not for profit enterprises. Satisfaction is a non-situation specific concept. Satisfaction measurement projects are large scale, long term, expensive undertakings that require significant input and support from top management in order to be successfully implemented. In this regard, satisfaction measurement projects are similar to total quality management and quality improvement projects.

It is important to review the most frequently cited problem areas that have kept other large scale quality and change satisfaction measurement projects from being successfully implemented. This

information can be factored into the design and implementation of any citizen measurement project undertaken by Mn/DOT to increase the likelihood that the project will be successful. The following list of six factors is a modified version of the factors identified by Lovelock [23] and it includes information taken from the sources listed in Appendix D of this report.

Issue # 1: Failure to Get Top Management Commitment

Problems arise here if top management feels that their job is finished once they commission a project. This is particularly problematic in companies with a strongly directive top down management style. In these situations, middle managers wait for top management direction and the direction never comes. Even in those situations where middle management knows that they are supposed to design and implement satisfaction measurement programs, **top management must still provide daily, consistent, almost relentless leadership.**

Issue # 2: Focusing on Activities as Opposed to Results

The reason to measure satisfaction is to help management make better decisions regarding what products and services to provide and how to provide those products and services. Satisfaction measurement, then, is a means to an end, not the end. In addition, satisfaction measurement is **not a one time activity.**

Issue # 3: Miscommunication Inside the Firm

Oftentimes projects fail because people inside the firm misunderstand what is going on, why it is going on and why it is going on in one area and not in another. Satisfaction measurement projects are **ongoing projects** and they tend to be projects that are done sequentially. **People inside the organization need to understand both these things.**

Issue # 4: Lack of Training

Top management cannot expect that well intentioned employees will automatically do the right thing. **Employees need guidance and direction** with regard to where to focus their initial activities and they may also need specific training before they attempt to implement any of the new measurement techniques or make changes to products or services based on survey results.

Issue # 5: Low Threshold for Pain

Because the measurement task is so daunting, and because initial results may not be positive, it is easy for top managers as well as other employees to switch from one topic to another as soon as the going gets a little tough. A frequent result of this particular problem is that initial survey results indicate a strong level of customer dissatisfaction and rather than focus on improving that low level of satisfaction, a decision is made to move onto another topic or area. The fact is, the initial contact with people creates an expectation and the **lack of follow-up can lead to an increased level of dissatisfaction**. It also teaches low level managers that bad news is to be buried and that no news is good news.

Issue # 6: Unreasonable Expectations

This last category includes a number of variations on a theme. One is that people may not allow enough time for the project. Another is they may not allocate enough money for the project. They may expect to turn the organization around in a short period of time. There seem to be two general themes that emerge from the comparisons of successes and failures of these large scale, long term projects. The first is the importance of **top management involvement** in both committing to the project and in planning the project. The second issue is the **importance of the initial activities**, that is, the first measurement activity should be selected with care and should be selected in such a way as to insure their success both within the firm and outside organization.

In a private sector setting, the outsiders could include **customers and stockholders**. In a public sector setting, outsiders could include specific users and beneficiaries and it could also be expanded to include all citizens and all stakeholders and agents. Simply stated, this means that there is much more at stake when large scale projects such as the design and implementation of a satisfaction measurement system are being contemplated. Anyone in the public sector has the right to look at what the agency is doing and anyone can complain if they feel what is being done is wasteful.

QUESTION 6: WHAT ARE THE MAJOR ISSUES THAT MUST BE ADDRESSED IN ORDER FOR A SATISFACTION/DISSATISFACTION (S/D) SYSTEM TO BE SUCCESSFULLY IMPLEMENTED IN A PUBLIC SECTOR SETTING IN GENERAL AND AT Mn/DOT IN PARTICULAR?

Introduction

The major concerns noted in the last chapter develop, in essence, from **lack of top management concern and support**. In order to avoid these problems, the top management at Mn/DOT must determine the time and the money required in order to develop and implement a customer satisfaction measurement system. Then they must decide whether or not a customer satisfaction measurement system will generate benefits to the agency **and** to the citizens of the State of Minnesota that exceed the cost to develop and implement the system. If the Top Management at Mn/DOT feel the project **will create value** they should put their **wholehearted, visible support** behind the project.

There are two additional issues which must be resolved in order for Mn/DOT to be successful in the measurement of citizen satisfaction. These broad areas include: **theoretical measurement issues**, and issues related to the development of **internal and external communication strategies** regarding the collection of citizen input in general.

Theoretical Measurement Issues

The earlier discussions of operational definitions and methods of asking satisfaction questions represent a small sample of the theoretical issues. While a discussion of the major theoretical issues is beyond the scope of this paper, two of the more important issues are briefly discussed to illustrate the nature of the theoretical measurement issues. The issues involve the specification of the attributes which must be measured in order to adequately measure satisfaction with a particular product or service. The second issue relates to the interpretation of resulting satisfaction scores and translating them into managerial action.

Specification of Product and Service Attributes

When a person says he/she is satisfied with a product, he/she is actually making a number of individual smaller or attribute level evaluations for a particular product. These individual attribute level evaluations are combined in some fashion to formulate a "product" evaluation. It is possible that some generic set of evaluative attributes could be created which could be used by any citizen to evaluate any Mn/DOT product or service. At present, such a list does not exist and it is not likely to be created without considerable research. There are some written reports which document some of the most recent efforts to begin this process. [37]

There have been efforts in other areas to develop generic attribute lists; perhaps the most widely recognized is the ServQual scale. [28] The multiple factor, and multiple attributes per factor scale has been used in many published studies. Recently, however, numerous authors have written critical articles citing problems in the generalizability of the scales (not true generic attributes and factors) and problems with the way the expectation and evaluation components of the satisfaction equation are measured. [5, 29] The point is, it is very difficult to develop measures that satisfy the definition of true generic attribute of product evaluation.

The second theoretical issue has to do with the interpretation of the resulting satisfaction scores. The issue is not a new one and it was Olander [25] who first warned about the possible problems of interpreting satisfaction measurement results when he said:

“The essence of all these theories is that satisfaction is believed to be judged relative to a criterion whose level differs among individuals and groups according as previous experience and/or achievements in other spheres of life and/or the situation of comparable social groups differs.” [25, pg. 413]

“There is seldom, if ever, a yardstick which is common to different groups or which stays put over time. Is it then possible for a policy maker--or anybody else--to make much sense out of satisfaction ratings as measures of society's achievements?” [25, pg. 415]

Simply stated, customers may frame the issue differently when responding to a question. In addition, how the question is worded by the researcher can have an effect on the response to the question. In addition, there is the problem of how to interpret a "low" satisfaction score; is it the

result of an unrealistic expectation or poor performance on the part of the service provider? Clearly each of these issues must be addressed if the user of CS/D measurement data is to be able to draw valid conclusions.

Summary

After reading the preceding sections, a reader could conclude that a lot of **critical thinking** and **empirical research** must **precede** any satisfaction data collection effort. It is also possible to conclude that now is the time to make quick selections of concepts and techniques and get started with this critical data collection effort as soon as possible. These competing interpretations are classic examples of a **practitioners and a theoreticians viewpoints**.

The **practitioner** wants to take **action** and the **theoretician** wants to be sure the **terms and measures are correct**. Which interpretation is correct? What should Mn/DOT do? Should they forge ahead ignoring the theoretical concerns or should they stop all applied measurement activities until the definitive word is in on what to measure and how to collect and interpret the data? As described above, these two options represent the polar extremes in a classic "either or" battle.

The agency needs CS/D data **and** they also need to be certain of what they are collecting before they collect data. The issue isn't about selecting one or the other. The issue is really about how to get both sets of issues resolved. A first step in this process is to separate the measurement activities into their proper components. That is, managerial (we need data) and theoretical (we have to be certain of what we are measuring). It may also be useful to add two other dimensions to describe these activities, based on focus of the activity (either situation specific or agency wide) and on the primary intention of the effort (measurement or teaching and training).

Taken together, these six descriptors can be used to generate eight separate types of studies or activities. The most rigid in terms of methodology is theoretical - agency wide - measurement activity. The most flexible is managerial - situation specific - teaching. Viewed this way, a manager can begin to take action and collect information. The manager must, however, be aware that these early activities are designed to begin the learning process necessary for any enterprise to begin to implement a customer survey. **The result is not to measure satisfaction**. This would not be attempted until the agency has investigated these and other theoretical issues that surround the application of the satisfaction concept in the public sector setting.

Internal and External Communication Issues

The second major set of issues relates to the development of both internal and external communication strategies regarding the collection of citizen input **and** the collection of citizen satisfaction information. These important communication issues are best illustrated in the context of an actual citizen input collection setting. The next section reviews the distinction between citizen input and satisfaction measurement. This is followed by a discussion of the issues to consider in designing an initial **citizen input** collection process. This is followed by a discussion of the steps to follow to prepare both internal and external communication strategies.

As noted earlier, anyone can ask a set of questions which contain the word satisfaction; however this does not mean that satisfaction is being measured. Satisfaction cannot be measured until the theoretical issues mentioned above are answered in empirical studies conducted either by or for Mn/DOT. Given this fact, any initial measurement activity will by definition, **not be a citizen satisfaction study**. Once these theoretical questions have been answered by empirical studies; senior management can decide if they want to design and implement a citizen satisfaction measurement system.

In the interim, Mn/DOT needs to continue to collect citizen input and to do so in a logical and orderly manner. This initial study is important for a number of reasons, including the fact that it sets the stage or the tone for subsequent studies. In other words, if the first study is not successful, it makes it more difficult to find individuals who will be interested in investing time and effort in expanding the citizen input measurement activities. The next section discusses how to select an initial large scale citizen input study.

Deciding Scope of the Initial Data Collection Effort

The very first step should be to specify the goal for the initial study. The goal should be based on the type of action that will be taken as a result of the initial study. Some possible goals include the following:

1. Focus efforts on the biggest market segment that requires a decision or an action to be evaluated before the actual decision is made.
2. Focus on the current most important decision that must be made within the agency.
3. Focus on a decision and subsequent action which has the greatest long term significance to

the economy of the state.

4. Focus on a decision that has special political appeal.

This list could obviously be expanded and these four are simply offered as examples of the kind of criteria that could be used to specify the initial study.

The goal in selecting the area for the first study should be to select a study in a way to maximize the long term success of the measurement project. In my review of the literature from total quality, productivity improvement, public relations and publicity, I found a consistent pattern of recommendations for success (See material in Appendices B and D). The consensus is that the best place to start is within an area in the organization where employees are or have shown considerable interest and action on projects closely related to the measurement of customer satisfaction. The reasons why this strategy leads to success is that by selecting these interested employees builds on existing efforts and also rewards those who have done the initial work. The results are more likely to be useful to decision makers (and therefore used by decision makers) when internal decision makers are selected and involved in developing a research agenda. Essentially what you are trying to do is increase the odds that the first study will be a successful effort.

Describing the Initial Study

Regardless of what form the first study will take, it should be described and then evaluated using the following set of reporters questions. **Who** will use or see what information that is going to be collected. In **what** manner will the information be used? **What** is the decision that is to be made and how will this information be used to help make that decision? **When** will this information be used and **when** will the decision be made? And finally, what is the cost to benefit ratio for this proposed data collection activity? This is an example of describing the data collection setting from the collector's perspective that was mentioned earlier.

Internal Communication Strategies

In reviewing the literature, another common theme appeared and it relates to teaching employees about customer satisfaction measurement. The most successful companies develop a curriculum that teaches managers what customer satisfaction is and how it is measured and how it can be used. It follows that this training must also discuss the collection of citizen input that is not measuring

satisfaction. In addition, the best internal training programs also train managers in what not to do and why it is important that certain behaviors be avoided. The interested reader is referred to the following list of references to learn more about successful training programs used by both public and private sectors. [3, 10, 11, 12] These training programs really represent a form of internal communication and, if done successfully, they help develop a strong sense of what to do and why to do it.

It is not enough to simply communicate and train people inside the organization. The training and communication must also be done on the outside. The following sections discuss what successful companies have done to communicate to outside groups, including customers, stakeholders and agency groups.

External Communication Strategy

Any time the public's money is being spent, especially when it is being spent on something new, you can count on critics voicing concern for what it is you are doing. The following section presents a four step planning process for preparing to deal with questions, inquiries and criticism from outside the agency.

Step # 1

Prepare your position statement toward the collection and use of citizen input and the fact that this initial effort is **not designed to measure satisfaction**. You simply must spend the time to fully articulate what you see as the overall objective of your measurement program, the objective of this specific activity, the criteria used to select the first project and the anticipated steps involved in future projects. Clearly some difficult decisions will have to be made regarding what markets to focus on, what particular groups of people to measure and what particular questions to ask them. It is important to note that there is not a right or wrong answer to this initial specification. The selection is right because of assumptions that are made and tradeoffs that are made. While top management may not want to share the list of assumptions or tradeoffs with the public, they must still explicitly list them and discuss them as a group. Having done this, you are ready to move to Step # 2.

Step # 2

Top management should seek the advice and counsel of others within the organization to help answer the following three questions. First, what user, stakeholder and agent groups could be thought to be in support of the overall measurement activity and the selection of the first project? Second, what user, stakeholder and agent groups could be thought to be neutral toward the activity? Third, what user, stakeholder and agent groups could be thought to be against the activity?

Step # 3

After these lists have been prepared, top management should again seek counsel. This time, they should seek advice from communications, public relations and political policy experts to determine communication strategies for each of these three groups. These strategies should include an offensive and a defensive component and the actual communication documents should be created with the advice of these experts.

Step # 4

During this stage, top management should implement the appropriate actions designed to deal with all three groups. They should also monitor the initial results of these actions and be prepared should other communication strategies be necessary.

Summary

The overwhelming consensus among managers, consultants and other experts who have lived through the successful implementation of new large scale programs is that you cannot develop communication strategy in a reactive fashion. Clearly most of the major concerns can be anticipated if top management will just invest the time and effort to ask the kinds of question and seek the counsel described in the four step process above.

CHAPTER 4

RECOMMENDATIONS

Throughout this report a number of specific suggestions were made regarding how senior management should proceed to design and implement a more formal procedure to collect citizen input. This section of the report presents a summary of the most important suggestions in the form of two broad recommendations. The first recommendation covers policy issues while the second deals with research related issues.

Policy Recommendations

Senior management should decide the amount of effort and the nature of the effort that will be dedicated to the collection of citizen input. Results of this decision should be summarized in the form of an agency-wide policy statement. Senior management should also develop internal and external communication strategies to support this data collection initiative. This formal statement of direction and the supporting internal communication strategy are needed to help insure that managers at Mn/DOT collect useful, that is, action oriented information in their marketing research projects. A thoughtfully prepared and carefully executed external communication strategy can help protect the agency from uninformed and unfounded claims that taxpayer money is being wasted collecting useless and self-serving information.

Research Recommendations

There are two specific issues that should be formally investigated using agency supported research projects. The first issue involves market definition, the other involves measurement of satisfaction in a public sector setting. Each of these specific project recommendations are now briefly discussed.

Market Definition Study

The method for defining markets presented in this report (broad market - specific market - segments of specific markets) was offered as a suggested method. Senior management should commission an empirical study of this method as well as alternative methods that could be used to

define and describe markets for planning purposes. Based in part on the results of this empirical investigation, senior management should recommend a method for defining markets and market segments that should be used on an agency-wide basis to guide planning efforts.

Satisfaction Measurement Study

As noted earlier, collecting citizen input is not the same as measuring citizen satisfaction. In addition, monitoring citizen satisfaction will involve designing and implementing a number of expensive measurement projects, and it will take some effort for the agency to learn how to respond to satisfaction measurement results. The potential benefit of collecting satisfaction input must be compared to the cost to collect the information and the inherent risk associated with the data collection effort.

At this time the agency should continue to collect citizen input, however, the agency should not attempt to collect satisfaction data. There is simply too much risk associated with such a measurement effort. It would be impossible for senior management to make an enlightened and defensible decision regarding whether or not to collect citizen satisfaction data without first investigating a number of theoretical issues regarding satisfaction measurement in a public as opposed to a private sector setting.

Given this, it is recommended that senior management commission empirical research projects to investigate how citizens form expectations, how they perform their evaluations of service delivery, and the effect of single episodes of evaluation on their overall evaluation of agency performance.

REFERENCES

1. Berkowitz, Eric N., et. al., (1994), *Marketing*, 4th. edition, (Homewood, Ill.: Richard D. Irwin).
2. Bowersox, Donald J., et al.(1986), *Logistical Management*, 3d ed. (New York: MacMillan Publishing Company).
3. Brown, Richard E. and James B. Pyers, 1988, "Putting Teeth into the Efficiency and Effectiveness of Public Services," *Public Administration Review*, vol. 48, (May/June), No. 3, pp. 735-742.
4. Bryson, John W., (1988), *Strategic Planning for Public and Nonprofit Organizations*, (San Francisco: Jossey Bass).
5. Carman, J., "Consumer Perceptions of Service Quality: An Assessment of the SERVQUAL Dimensions," *Journal of Retailing*, 66 (Spring), pp. 33-55.
6. Charsky, Mary L and Margery L. Steinberg (1993) "Customer Satisfaction--Where Are We Going? Where Have We Been? in *Proceedings of the American Marketing Association Winter Proceedings* (Chicago: American Marketing Association) 362-9.
7. Churchill, Gilbert A., Jr. (1994) *Marketing Research: Methodological Foundations* 4 ed.. (New York: Dryden Press).
8. Crosby, Philip B., (1979) *Quality is Free*, (New York: McGraw-Hill).
9. Engel, James F., Roger D. Blackwell and Paul W. Miniard (1990), *Consumer Behavior*, New York: Holt, Rinehart, and Winston, Inc.

10. Epstein, Paul D., "Get Ready: The Time for Performance Measurements is Finally Coming!," *Public Administration Review*, (Sept/Oct 1992), pp. 513-519.
11. ----- "Measuring the Performance of Public Services," in Holzer, Marc (ed.), *Public Productivity Handbook* (New York: Marcel, Dekker, Inc., 1992) 161-194.
12. ----- *Using Performance Measurement in Local Government: A Guide to Improving Decisions, Performance, and Accountability*, (New York: Van Nostrand Reinhold Company, 1984).
13. Erevelles, Sunil and Clark Leavitt (1992), "A Comparison of Current Models of Consumer Satisfaction/Dissatisfaction," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 5, 104-114.
14. Freeman, R. Edward, *Strategic Management: A Stakeholder Approach*, (1984), (Marshfield, Mass.: Pitman Publishing Co.)
15. Haas, Robert W, *Business Marketing management: An Organizational Approach*, 5th. ed., (Boston: PWS-Kent Publishing, 1992).
16. Hauser, John, et. al. (1994), "Customer Satisfaction Incentives", *Marketing Science*, 13,4, 327-350.
17. Hausknecht, Douglas R. (1991), "Measurement Scales in Consumer Satisfaction/Dissatisfaction," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 3, 1-11.
18. Holzer, Marc, "Mastering Public Productivity Improvement," in Holzer, Marc (ed.), *Public Productivity Handbook* (New York: Marcel, Dekker, Inc., 1992) 1-13

19. -----, Ellen Rosen, and Constance Zalk, "Steps to Productivity Improvement," in Matzer, Jr., John, (ed.), *Productivity Improvement Techniques: Creative Approaches in Local Government*, (Washington, DC: ICMA, 1986) 9-28
20. Kotler, Philip, 1994, *Marketing Management*, 8th ed., (Englewood Cliffs, NJ: Prentice Hall,).
21. Lalonde, Bernard J., Martha C. Cooper, and Thomas G. Noordewier, (1988) *Customer Service: A Management Perspective*, (Oak Brook, IL: Council of Logistics Management).
22. Levitt, Theodore, (1983), "After the Sale Is Over...", *Harvard Business Review*, vol. 61, (September/October), 87-93.
23. Lovelock, Christopher, (1994), *Product Plus*, (New York: McGraw-Hill).
24. McClendon, Bruce W. *Customer Service in Local Government: Challenges for Planners and Managers*. (Washington, D. C.: American Planning Association , 1992)
25. Olander, Folke (1977), "Consumer Satisfaction - A Skeptic's View," in H. Keith Hunt, ed., *Conceptualization and Measurement of Consumer Satisfaction and Dissatisfaction*, Cambridge, MA: Marketing Science Institute, Report No. 77-103, 409-454.
26. Oliver, Richard L. (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 17, (Nov), 460-469.
27. Oliver, Richard L. and Wayne S. DeSarbo, (1988), "Response Determinants in Satisfaction Judgments," *Journal of Consumer Research*, 14 (March), 495-507.
28. Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry (1988), "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing*, 64 (1), pp. 12-40.

29. Peter, J. Paul, Gilbert A. Churchill, Jr., and Tom J. Brown (1992), "Caution in the Use of Difference Scores in Consumer Research," *Journal of Consumer Research*, 19 (March), pp. 655-662.
30. Stern, Louis W. and Frederick D. Sturdivant, 1987, "Getting Things Done: Customer Driven Distribution Systems," *Harvard Business Review*, vol. 65, (July/August), 34-41.
31. Tocqueville, Alexis de, 1945, *Democracy in America*, 2 vols, New York: Vintage Books, vol. 1, 59.
32. Tolman, E.C. (1932), *Purposive Behavior in Animals and Men*, New York: Appleton-Century.
33. Toregas, C. 1989, "Electronic Democracy: Some Definitions and a Battle Cry", *Public Management*, (v 71, no. 11)
34. Webster, Noah. (1983) Webster's New Universal Unabridged Dictionary 2nd. ed. (New York: Simon and Schuster Publishing Company)
35. Whicker, Marcia Lynn and Todd W. Arenson (eds.). (1990), *Public Sector Management*, (New York: Praeger Publishing).
36. Mn/DOT, (1994), *Minnesota Statewide Transportation Plan*, (St. Paul, Minnesota: Minnesota Department of Transportation).
37. Mn/DOT, (1994), "Transformation Model: Changing to Meet a Changing Environment," Pathbuilding Press in *Express* (v. 7, no. 7) June/July.

APPENDIX A

SELECTED REFERENCES RELATED TO THE MEASUREMENT OF SATISFACTION

*(The 11 pages of references are not included in this
version but are available upon request.)*

APPENDIX B

SELECTED REFERENCES RELATED TO PUBLIC SECTOR MANAGEMENT AND THE MEASUREMENT OF EFFICIENCY AND EFFECTIVENESS

(The 7 pages of references are not included in this version but are available upon request.)

APPENDIX C

SAMPLE FORMATS FOR SATISFACTION QUESTIONS

Measures Used in Consumer Satisfaction Research

1. Samples of verbal/cognitive question formats

Disconfirmation measures

1a. My expectations were:

Too high: It was poorer than I thought	Accurate: It was just as I had expected	Too low: It was better than I thought
: ___ : ___	: ___ : ___	: ___ : ___

1b. ___ was much better (worse) than I expected.

Very Strong Yes	Strong Yes	?	Strong No	Very Strong No
---	---	---	---	---

1c. Much more than I expected Somewhat more than I expected About what I expected Somewhat less than I expected Much less than I expected

1	2	3	4	5
---	---	---	---	---

1d. Overall, how satisfied have you been with this _____?

100%	90	80	70	60	50	40	30	20	10	0%
Completely Satisfied					(Half & Half)					Not at all Satisfied

1e. ___ was very satisfactory (unsatisfactory)

Very Strong Yes	Strong Yes	Yes	?	No	Strong No	Very Strong No
---	---	---	---	---	---	---

1f. How satisfied were you with _____?

Very Dissatisfied	Somewhat Dissatisfied	Slightly Dissatisfied	(Neither)	Slightly Satisfied	Somewhat Satisfied	Very Satisfied
---	---	---	---	---	---	---

4. Sample of graphic/affective question format

4a. "Feeling" Thermometer

Where would you put ____ on the feeling thermometer?

<u>WARM</u>	100	Very warm or favorable feeling
	85	Good warm or favorable feeling
	70	Fairly warm or favorable feeling
	60	A bit more warm or favorable than cold feeling
	50	No feeling at all
	40	A bit more cold or unfavorable feeling
	30	Fairly cold or unfavorable feeling
	15	Quite cold or unfavorable feeling
<u>COLD</u>	0	Very cold or unfavorable feeling

5. Samples of verbal/conative question format

Verbal

Behavioral intentions

5a. Because of ____ I would come (shop) here again.

Very Strong Yes	Strong Yes	Yes	?	No	Strong No	Very Strong No
_____	_____	_____	_____	_____	_____	_____

5b. How likely are you to play with (use) ____ in the future?

Very Unlikely	Unlikely	Likely	Very Likely
- 2	- 1	+1	+2

5c. Knowing what you know now, what are the chances in ten (10) that you would choose to use the ____ again?

0	1	2	3	4	5	6	7	8	9	10
No Chance										Certain

APPENDIX D

SELECTED REFERENCES RELATED TO EXPERIENCES WITH QUALITY AND SATISFACTION PROGRAMS

*(The 4 pages of references are not included in this
version but are available upon request.)*

