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How to Conduct Customer Surveys



**Institute for
Citizen-Centred
Service**

**L'Institut des
services axés
sur les citoyens**

Manual



Serving the public, stakeholders, and partners is nothing new to those working in the public sector. We communicate with them and listen to their ideas as part of our everyday business. What is new to many is the term “customer”. Yet, we all have customers, including one another.

Our customer base is very large and varied, so it is necessary to use every opportunity to hear the voices of our customers. We hold forums, workshops, conferences, training sessions and meetings of all sizes. We use informal sessions, focus groups, surveys, comment cards, internet feedback screens, and more, to hear what customers think of our services. Speakers invite questions following their remarks. Hotlines and counter services seek customer comments.

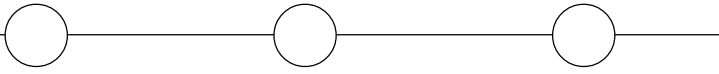
How To Conduct Customer Service Surveys is designed to help public-sector organizations decide whether and how to gather customer feedback. All of us have a need to hear how we are doing. Gathering feedback may take only a minute or two of listening to an unsolicited comment or it may require an extensive customer survey. This manual provides an array of techniques to help you seek and use information that you hear from your customers. The results of the surveys will enable you to improve processes, products and services in ways that customers will recognize and appreciate.

How This Manual Was Developed

This manual is based on a document called ***How to Conduct Customer Surveys*** prepared by the Ontario Public Service Restructuring Secretariat, which in turn was based on a document called ***Hearing the Voice of the Customer*** prepared by the U.S. Environmental Protection Agency (EPA). The Government of Ontario and the EPA have graciously allowed us to tailor the document for use by the ICCS.

It also contains a client satisfaction survey tool that was originally developed for the Citizens Centred Service Network and published by the Canadian Centre for Management Development. Called the Common Measurements Tool (CMT), it contains a set of core questions and provides a consistent measurement system for surveys conducted by the public service. The CMT is currently supported by the ICCS.

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How to

Conduct
Customer
Surveys

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Manual

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How to Conduct Customer Surveys was published with permission by the Government of Ontario based on a document called *How to Conduct Customer Surveys*, and by the U.S. Environmental Protection Agency based on a document called *Hearing the Voice of the Customer*. A client satisfaction survey tool contained in the manual was originally developed and published by the Canadian Centre for Management Development.

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Executive Summary

About this Manual

The manual provides information about collecting and receiving feedback from customers. Using it will improve your organizations's ability to effectively collect, receive, and use feedback from customers, both whether the service is directly delivered by your organization or through a partnership. This manual is about getting the customer-generated information you need quickly and at a relatively modest cost. It will also enable you to conduct customer feedback with less labour intensity, trouble, and personal concern.

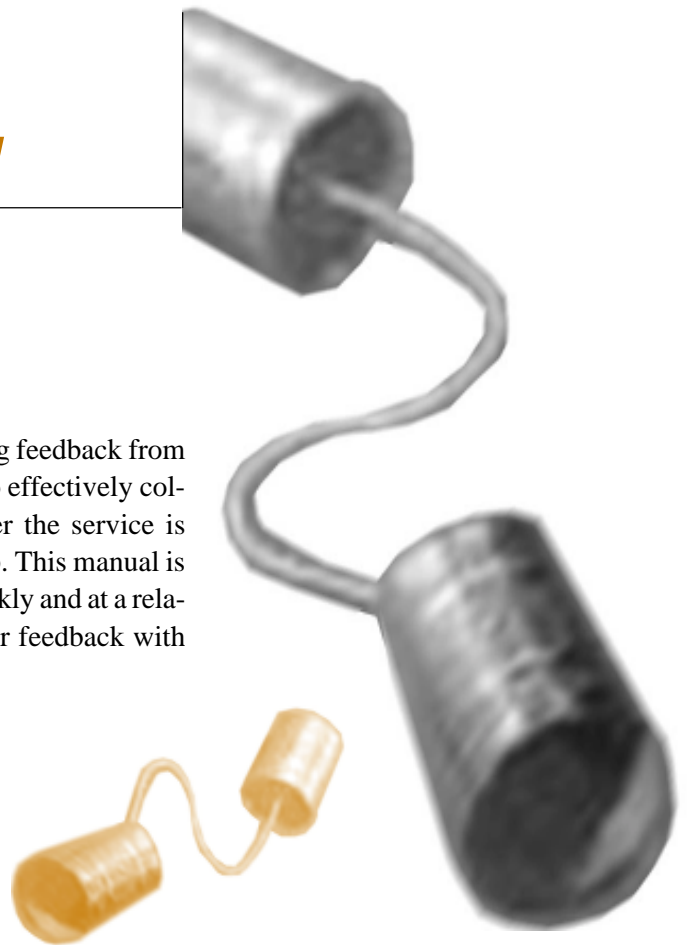
Why Survey Your Customers?

How many times have you discovered you were missing a critical piece of information preventing you from:

- Figuring out how service-delivery could be improved?
- Understanding why customers didn't seem satisfied?
- Answering an inquiry about your program's accomplishments or weak spots?
- Making a strong case for continuing the program?
- Being sure you made the right decision about which action would make the most significant program improvement?

You may have missed an opportunity because you lacked timely and reliable information. Armed with the right information, you could have made more informed decisions, eliminated a bottleneck, understood your customers' problems, documented your resource requirements, or known which changes would produce the biggest payoff.

Feedback—which refers to input on needs, expectations, and experiences—from customers enables you to measure whether the government is increasing its ability to satisfy customers. The bottom line is that finding out what customers think about what you do and how you do it will help make improvements in your products and services, the kinds of changes customers will notice and value.



The Common Measurements Tool

The manual also contains a new client satisfaction survey tool that is supported by the Institute for Citizen-Centred Service (ICCS). The Common Measurements Tool (CMT) is a client survey tool that offers a set of commonly used survey items and a consistent measurement system for public service organizations.

Its objectives are to:

- provide a ready-made tool for public service organizations
- enable like-organizations to compare results
- facilitate the sharing of information gained and lessons learned between organizations
- enable organizations to build internal benchmarks

Public-sector organizations can use the CMT as a template in designing a survey for their specific objectives and services. It measures customer/client satisfaction with a particular service using 5 elements of the service experience on 5 dimensions/ areas of service. Additional questions can be customized as needed. Once customized and implemented, it will allow public-sector organizations to compare results with each other if they wish, and to measure progress over time.

The CMT is in Appendix A at the back of the manual.

How is the Manual Organized?

The manual moves through a five-step model which can be successfully applied for obtaining customer feedback in a number of ways (such as surveys and focus groups). It contains checklists to help you organize and facilitate your customer feedback projects.

The manual provides an overview of what you will have to know and do. At the end are several Factsheets that provide additional in-depth help. They are referenced throughout the text.

Plan

- Consider organization's readiness to receive customer feedback
- Establish purpose of collecting feedback
 - objectives
 - how feedback will be used and who will use it
- Set core questions
- Determine schedule of asking customers for feedback
- Define your customers

Construct

- Decide data collection procedures (focus groups, kiosk, telephone, mail surveys)
- Determine sample size (using external expert if needed)
- Develop questions
 - CMT core questions
 - supplemental questions
- Pre-test questionnaire

Conduct

- Considerations are different depending on mode of data collection
- For focus groups consider: logistics, use of qualified moderator (s), how to ensure information is adequately captured
- For mail surveys consider: how to establish processes for tracking responses; develop data base to capture information; follow up to ensure questionnaires are answered (good communications with respondents can help improve response rates)
- For phone surveys consider the need to: train interviewers on background, scope and answers to frequently asked questions on the survey; ensure quality control procedures re delivery of survey
- For an internet survey: ensure respondents have access to internet; confidentiality of responses may be an issue to be managed

Analyze

- Analysts may want to:
 - collapse data into a smaller number of categories
 - use graphs, pie charts, or other ways of visually depicting results
- Use subgroup analysis to determine whether a specific demographic or user group has responded in a particular way
- Consider adequacy of findings
 - sample size, response rate, objectivity of questions can all affect adequacy of findings
- compare with previous survey results

Act

- Set improvement targets
- Develop and implement action plans to:
 - improve/enhance services
 - reward staff and customers
- Share results with staff and customers
 - written documentation/briefings

A note about conducting customer feedback activities

The purpose of this manual is to help conduct customer feedback activities in a systematic, scientific manner. The principles and practices in this document are sound, but there are many other informal ways to listen to your customers. Some of them may provide you with more valuable information than you will ever get from a statistically solid formal survey.

The most obvious way to get feedback is to *talk to your customers*. It may be a casual conversation while you are providing a service or product, attending a meeting, or sharing information. You might find valuable feedback in a complaint that provides good information about what needs fixing. You may hear a small or large suggestion about how to make things easier for the customer or the government.

Glossary of Terms

Common Measurements Tool (CMT)

A client survey tool which offers a set of commonly used survey items and a consistent measurement system for public service organizations.

Customer

Someone who relies on an organization for a product or service.

Stakeholder

Someone with an interest in an organization's work and policies, interacts with the organization on behalf of another person or group, or who influences the organization's direction.

Client

Someone with a dependent relationship on an organization (e.g. transfer payment agency).

Judgement Sample

Conscious selection of customers to contact from an entire group of customers.

Probability Sample

Random selection of customers selected from an entire group of customers.

Sample Size

Number of customers selected to participate in a survey.

Skip Pattern

Direction in a survey which indicates that, where the respondent gives X answer to a question, the surveyor is to skip specific questions that follow it.

Branching

Direction in a survey which indicates that an answer X to a question leads to a series of subsequent questions.

Analysis Plan

A tool for organizing the data which specifies how the organization will analyze the survey responses to deliver products.

Dependent Variable

Degree of customer satisfaction with a specific product.

Independent Variable

Information which explains differences in responses (e.g. different types of customers, differences in services received).

Census Approach

Every customer is selected to participate in survey. (Usually used when the total number of customers is relatively small).

Sampling Error

The relationship between sample size and accuracy of findings.

Confidence Interval

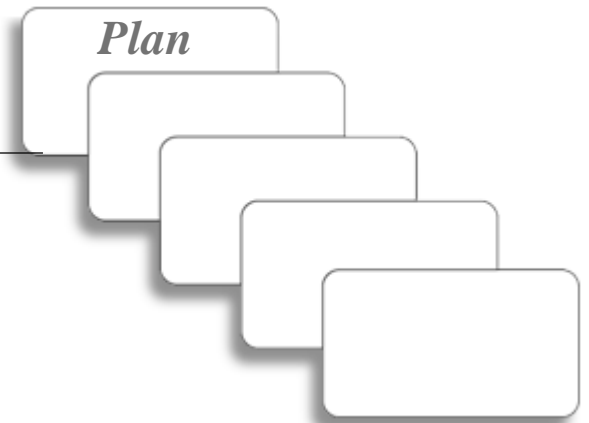
Specifies the range of values within which the true measure is found. Typically, survey results rely on a 95 percent confidence interval, but lower levels are acceptable.

Unit of Analysis

What is being studied; in customer feedback surveys, the unit of analysis is generally the individual person served; when continuous feedback methods are used, the unit of analysis is generally, the individual customer transaction.

1 Plan

PLAN THE CUSTOMER FEEDBACK PROJECT



Who Should Conduct a Customer Feedback Initiative?

Customer feedback is valuable for everyone, and everyone can easily ask his or her customers for direct feedback about their needs and how things are going. In fact, staff and managers have many opportunities to interact with customers. Among the most common are face-to-face discussions, telephone calls, meetings and other events, and written correspondence. You can find perspectives containing feedback in newsletters and other information materials, videos, web site messages or electronic mail, newspapers, radio and television talk shows, and news. Many customer interactions provide an immediate opportunity to hear from customers about how well the government is meeting their needs.

If you wish to track and analyze customer feedback over time, organizing your efforts is important. A critical question to ask yourself is whether you, as the initiator of a customer service measurement project, have the ability to act on the data yourself, or whether others will be critical to the process. For a unit or branch

to seek feedback, the decision to proceed may be made within the group. For larger, more complex, more resource-intensive customer studies that have broader impact, more coordination may be needed at higher levels of the organization.

If other staff or managers will be involved or affected, you should include them in the planning stages as early as possible. It is important that all interested or potentially affected individuals support the decision to obtain feedback and are willing and able to act on the feedback they receive. They may have very constructive ideas about the research objectives and methodology. Work things out early so that you can be responsive and act on the feedback you get. Front-end coordination can avoid potential roadblocks such as extra work that may develop from customer suggestions, concern about possible negative reactions to customer criticisms, or unrealistic customer expectations about the organization's capabilities.

How Ready is Your Organization for Customer Feedback?

As you begin to plan customer feedback activities, consider how ready your organization is for customer feedback by asking these questions:

- Do employees know why the organization has decided to get customer feedback?
- Do staff and managers intend to act on the customer feedback?
- Is everyone committed to taking action based on customers' input?
- Have staff participated in defining the need for customer feedback and in identifying the approaches to use for obtaining customer feedback?
- Have managers, employees, and other users of customer feedback information expressed their needs, issues, concerns, and objectives?
- Are there any barriers—such as concerns about change, extra work, and adverse findings—to using customer feedback successfully?
- If there are barriers, have methods been identified to overcome them?

If you answered “yes,” to these questions, your organization is clearly ready for customer feedback. If you answered “no” to some questions, you might consider what you can do to prepare your organization to obtain and use customer feedback. Simply put, the more ready your organization is for customer feedback, the more meaningful and successful the activity will be, which in turn means that policies and programs will be more responsive to customers’ needs and preferences.

If your organization is not fully ready for customer feedback, you should not necessarily halt your customer

feedback activities. Instead, understand that you will probably face some challenges in getting the work done and assuring customers that your organization is committed to implementing the changes they may want. You may have to start slowly, collecting and documenting unsolicited feedback and taking advantage of informal opportunities to gather customer input. You can make some positive changes based on that feedback, and build a case for performing broader and more formal information collection to verify and expand the anecdotal information you gathered.

Establish the Purposes of Customer Feedback

Define the feedback objectives

- *What do you want to accomplish with this feedback?*
- *Why are you conducting this feedback activity?*

Determine how the findings will be used

- *What will you do with the findings?*
- *Will they be used:*
 - > *As a key business performance indicator?*
 - > *To revise, correct, or improve a process?*
 - > *To identify customer needs and expectations*
 - > *As a management tool for customer relationships?*

- > *To inform planning, decision making, and resource allocation?*
- > *To reward, recognize, or compensate employees*
- > *To help validate standards, specifications, and measures*

Determine who will use the findings

- *Who else is interested in the findings?*
- *How much time are they able to give to learning about the findings?*
- *How would they prefer to learn about the findings – in briefings, written reports, graphs, action plans?*

What Kinds of Customer Feedback are Already Occurring?

Before beginning any customer feedback activity, check within your organization to see what has happened recently. The Institute for Citizen-Centred Service is developing a repository of survey results. This will enable you to see if other jurisdictions collected the same or similar information that you can use to avoid unnecessary duplication and compare or benchmark your results.

What are the Core Questions to Ask for Customer Feedback?

It is important to have some core questions that are always used in obtaining customer feedback. Core questions ask customers about the service delivery elements that are most important to them, such as how much time it took to be served, whether staff were courteous and helpful, and how convenient the facilities were.

The following pages contain the core questions that all customer feedback surveys should include.

Common Measurements Tool[®] Core Questions

SERVICE QUALITY DRIVER	ITEM	RESPONSE SCALE		CMT LOCATION
Timeliness	1. Time required to deliver the service/ product	How satisfied were you with this aspect of our service/ product? 1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	How important is this aspect of our service/ product to you? 1 - Very Unimportant 2 - Unimportant 3 - Neutral 4 - Important 5 - Very Important N/A - Not Applicable	Section 1 - item A
Knowledge, Competence	2. Service staff were competent	How satisfied were you with this aspect of our service/ product? 1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	How important is this aspect of our service/ product to you? 1 - Very Unimportant 2 - Unimportant 3 - Neutral 4 - Important 5 - Very Important N/A - Not Applicable	Section 1 - item J
Courtesy, Comfort	3. Service staff were courteous	How satisfied were you with this aspect of our service/ product? 1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	How important is this aspect of our service/ product to you? 1 - Very Unimportant 2 - Unimportant 3 - Neutral 4 - Important 5 - Very Important N/A - Not Applicable	Section 1 - item G
Fair Treatment	4. The service was provided in a fair and equitable manner	How satisfied were you with this aspect of our service/ product? 1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	How important is this aspect of our service/ product to you? 1 - Very Unimportant 2 - Unimportant 3 - Neutral 4 - Important 5 - Very Important N/A - Not Applicable	Section 1 - item E
Outcome	5. In the end, did you get what you needed from our organization?	a - YES b - NO c - I got part of what I needed		Section 1 - item 11
Access	6. Overall, how satisfied were you with the accessibility of the service/ product?	1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable		Section 2 - item K
Information	7. I was informed of everything I had to do in order to get the service/product	How satisfied were you with this aspect of our service/ product? 1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	How important is this aspect of our service/ product to you? 1 - Very Unimportant 2 - Unimportant 3 - Neutral 4 - Important 5 - Very Important N/A - Not Applicable	Section 3 - item K

SERVICE QUALITY DRIVER	ITEM	RESPONSE SCALE	CMT LOCATION
Overall Satisfaction Rating	8. Overall, how satisfied were you with this service/product?	1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	Section 5 - item 6D
Cost	9. Overall, how satisfied were you with the costing of the service/product you received?	1 - Very Dissatisfied 2 - Dissatisfied 3 - Neutral 4 - Satisfied 5 - Very Satisfied N/A - Not Applicable	Section 4 - item F

How Often Should You Ask Customers for Feedbacks?

Many organizations find it useful to contact their customers once a year to get an overall measure of satisfaction. Other types of feedback, such as follow-up telephone calls or comment cards, provide immediate information at the point of contact with customers. When organizations need targeted customer information, some find it useful to conduct multiple studies each year.

As a rule, you do not want to overburden your customers, so take care to:

- Avoid feedback activities that duplicate work already conducted
- Organize customer feedback projects to avoid contacting the same customer repeatedly
- Seek consent from customers to participate in feedback projects, especially those that are lengthy or where customers have been contacted previously.

So, there is no standard answer to the question about how often to ask for feedback. The frequency of customer feedback will depend on several factors:

- Were the findings of previous customer feedback studies positive or negative? If action was taken in response to concerns customers raised, has there been enough time to see whether those actions have been effective in improving customer satisfaction?

- Considering the issue(s) involved in the feedback activity, how often does it make sense to ask customers' opinions?
- Can you distinguish annual versus ongoing information needs and obtain feedback accordingly?
- Is there a way to match feedback with customer transactions? Can you ask customers at the end of a call if the information provided was useful? Is there any follow-up with them later to see if they used the product provided?
- Has some critical event occurred for which customer feedback would be important? (e.g., was the office reorganized to speed customer service or product delivery?)
- Are any changes in programs anticipated that call for surveying customers both before and after the change?

How Long Should Feedback Activity Take?

Obviously, many variables can affect the time it takes to complete a feedback effort. A few of these variables might include the type and method of feedback selected, the number of respondents, and the time it takes those responsible for the survey project to plan and act on the results. It is likely that many individuals, including the customer, will have expectations about how long the effort will last, and when results may become available. Therefore, it is important to carefully plan the schedule of a feedback effort. Below is an example of a timetable for a feedback survey.

Customer Feedback Survey—project timetable

DELIVERABLE	TIME FRAME
Project Planning and Design	Weeks 1-3 (2-3 meetings)
Design Survey Instrument	
Focus groups	Weeks 4-5*
Internal draft of questionnaire	Week 6
1st draft to survey team	Week 7*
Markup meeting	Week 7*
2nd draft to survey team	Week 8*
Revised draft to survey team	Week 9*
Final version sent for approval	Week 10*
Final approval	Week 12*
Data Collection	
Field Testing	Week 13
Revisions	Week 14
Phoning	Weeks 14-16
Analysis and Report	
Analysis	Weeks 17-21
Report	Week 21
Briefing charts	Week 23
Process Improvement Workshops	
Coordinating committee	Week 23
Executive sponsor/committee	Week 24
Notes to coordinating committee	Week 25
Notes to executive sponsor/committee	Week 26
Performance Standards and Process Improvement Implementation	
Improvement teams	Week 29

** If you use the Common Measurement Tool for a paper or electronic survey, you can collapse these steps into a week or two since the questions are already designed and tested for you.*

Who Are Your Customers and What Services and Products Do You Supply Them?

A *customer* is someone who relies directly on a provider for a product or service. Customers are defined based on the service or product they receive. They:

- Have a *direct relationship* with your organization, or through interactions with a contractor who represents you
- Receive one or more *services or products*
- *Rely* on your organization for a product or for specialized expertise
- Are *directly affected* by your organization's actions
- May receive *financial assistance*, such as grants or subsidies
- Include colleagues as *internal customers*. Relationships and transactions among colleagues are essential for delivering consistent, excellent service to external customers.

Stakeholders are individuals whose primary relationship with your organization is characterized by having an interest in its work and policies; they may interact with your organization for another person or group; or they influence your organization's future direction (including financial resources).

Clients are individuals and organizations with a dependent relationship on your organization.

Most customer feedback focuses on direct service recipients. For example, the Common Measurements Tool is designed to get feedback from internal and external direct service customers.

Feedback from stakeholders and clients is also necessary and valuable for specific activities of your organization. However, it is important to know when the individual who is giving feedback is trying to influence your decisions or is very dependent upon your organization and maintaining goodwill in your relationship.

Before beginning a customer feedback project, it is important to be clear about which customers and which products and services are the focus.

Why Establish Quality Control Procedures in Customer Feedback Activities?

Developing and applying good internal control procedures is a sound business practice and helps assure the quality, reliability, and integrity of information used for decision making. The standards and techniques of quality control should apply to data collection, administration of data collection activities, analysis, and reporting of results from customer feedback.

*“If you Don't care
where you're going,
then it does not matter
which way you go.”*

LEWIS CARROLL

or

*“If you don't know
where you're going, you
won't know when you
get there.”*

YOGI BERRA

Controls vary and may be as simple as merely limiting access to raw, customer-specific data; separating the data collection, administrative, and presentation duties from those who have to act on the results; or as thorough as performing independent quality assurance reviews. The purpose of internal controls is to provide reasonable assurance that the objectives of customer feedback will be accomplished in a reliable and cost-effective way.

“Before we start talking, let us decide what we are talking about.”

SOCRATES

Protection of Privacy

Most jurisdictions have privacy laws to protect personally-identifiable information held by public-sector organizations. Personally-identifiable information can include, but is not limited to name, address, sex, age, education, medical or employment history. Complex legal rules protect this type of information. Do not collect, personally-identifiable information unless it is absolutely necessary. If you must work with personally-identifiable information, contact your Freedom of Information (FOI) coordinator or equivalent as soon as you can to avoid contravention of legislation.

Getting Approval to Proceed with Customer Feedback

You will probably need approval to proceed with your customer feedback survey. Make sure you know the approval process within your organization, and develop a written plan to submit for the necessary approvals before you proceed.

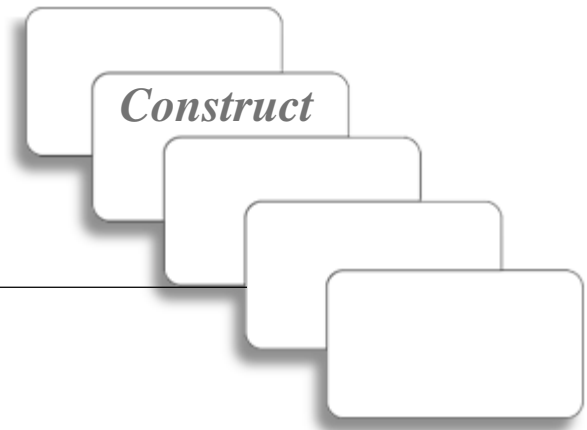
DEVELOP A WRITTEN PLAN FOR THE CUSTOMER SURVEY CHECKLIST

- > Purposes of the activity
- > Quality control procedures
- > Ways findings will be used
- > Identify the target group
- > Methods of data collection
- > Timing for data collection
- > Analysis plan
- > Tools for carrying out feedback activity
 - Discussion topics
 - Survey instrument
 - Database
- > Anticipated products
 - Tables
 - Text that interprets findings
 - Slides
 - Specific conclusions
 - Recommended actions

> PLAN checklist

- > *See what feedback you already have*
- > *Decide which questions to add to the core questions*
- > *Decide frequency for customer feedback*
- > *Define the target customer population*
- > *Identify services supplied to customers*
- > *Establish purposes of customer feedback*
- > *Decide whether to do the activity or contract out*
- > *Determine resources needed*
- > *Obtain approvals to proceed*

2 Construct Data Collection Procedures



Deciding on the Best Approach for Assessing Customer Satisfaction

There is no one best approach for assessing customer satisfaction. What will work best for any particular organization will depend on the kind of product or service provided, the kinds of customers served, how many customers are served, the longevity and frequency of customer/service provider interactions, and what you intend to do with the results. Two very different approaches produce equally meaningful and useful findings:

- Continuous assessment methods—Methods to obtain feedback from the individual customer at the time of product or service delivery (or shortly afterwards).

This manual focuses on methods for obtaining customer feedback periodically, but it is very important to remember that you can adopt continuous assessment as a standard method for obtaining customer satisfaction information. Some ways to include continuous assessment in your work include:

- Inserting a feedback card in every copy (or every *n*th copy) of a published report sent out
- Making a follow-up phone call to every customer (or to every fifth, or twelfth, or *n*th customer) within one or two days of interacting with that customer.

The information you obtain from continuous assessment can provide valuable and timely insight into the experiences your customers have had with your organization.

- Periodic survey approaches—Methods that obtain feedback from groups of customers at periodic intervals after service or product delivery. They provide an occasional snapshot of customer experiences and expectations.

Understanding customers' expectations and satisfaction requires multiple inputs from customers. It is like peeling away layers of an onion—each layer reveals yet another deeper layer, closer to the core. Both methods are helpful in obtaining customer feedback for assessing overall accomplishments, degree of success, and areas for improvement.

Deciding on the Data Collection Method

Before considering systematic methods for collecting data, remember that informal methods for obtaining information from customers clearly produce information that is valuable. Everyone needs to recognize and use these everyday opportunities for customer feedback. Use this information to complement the more systematic forms of gathering feedback discussed here.

Many formal methods can be used to collect customer feedback data. Methods frequently used to gather customer feedback include focus groups, a mail-back postcard that is included among materials sent to customers, a mail survey, electronic kiosk, a telephone survey, a publication evaluation form included at the back of every copy, and a printed or in-person survey (which might include computer-assisted personal interviews or an intercept survey where you ask every *n*th customer attending a function or visiting a facility to participate). Electronic mail and Web based surveys will become an increasingly important means for collecting customer feedback as more people gain access to the Internet.

When you decide which method to use, you should consider several factors, such as *the types* and number of questions to ask. The decision will also be affected by available resources to gather customer feedback, how fast decision-makers need the information, and how representative the findings have to be. The response rate—the number of customers who actually answer questions divided by the number contacted for information—is also an important consideration because it will affect the way you can use findings. A summary of different methods appears in the table on the next page.

When selecting a method for obtaining customer feedback, recognize that you need different kinds of information for different methods of obtaining customer feedback. If, for example, you choose a mail or phone survey, you will need an accurate name, address, and/or telephone number. At times it may also be critical to know which programs or services the customer sought or received, as well as demographic information.

Note that several different practices can affect the ratings of various data collection methods:

- Focus groups, telephone, and in-person surveys require trained staff to conduct proper interviews and prevent interviewer bias.
- Focus groups, telephone, and in-person surveys provide the opportunity to show through direct personal contact that your organization takes customer feedback seriously.
- Telephone surveys can more readily accommodate differences in language and literacy levels than can mail surveys, but they cannot accommodate lengthy questionnaires or visuals.
- Some people are difficult to reach or do not have a telephone, and many are reluctant to, or will not, participate in telephone interviews.

- Mail surveys can be longer, since respondents can work at their own pace, but they have the longest response time and may not reach the intended people.
- Mail surveys allow no interviewer bias, but they offer little ability to probe or ask complex questions, and should there be any ambiguity in a question, it cannot be clarified.

The amount of follow-up can dramatically influence costs, timeliness, and the ability to generalize results. Mail surveys, for example, may require several follow-up mailings to customers who do not respond initially. Customers who initially decline to participate in a telephone survey may be assigned to a special staff member who is charged with trying to convince the customer to answer the questions. An advance letter can increase participation and response rates for mail and telephone surveys. It can also allay customers' concerns about such matters as how they were selected, why they have been selected to participate again (if applicable), anonymity, how long it will take them to answer the questions, and how findings will be used. (See sample advance letter following.)

Deciding on the Sample

If the number of customers of interest is relatively small - not more than 50 - each could be contacted to obtain feedback. This is the *census* approach. In many cases, services or products are provided to a large group of customers - too large for a census approach. In such cases, a *sampling* approach is needed, and two options are possible:

- a *judgement sample*, in which you consciously select the customers you will contact from the entire group of customers served, and
- a *probabilistic sample*, in which customers you will contact are picked randomly from the entire group of customers served during the period interest (i.e. the past year).

Comparison of Feedback Methods

FACTOR	FOCUS GROUPS	MAIL-BACK FORM*	MAIL-OUT SURVEY	TELEPHONE SURVEY	IN-PERSON SURVEY	CONTINUOUS (every nth customer)**	ELECTRONIC via INTERNET
Cost	moderate	low	moderate	moderate	high	moderate	low
Convenience for customer to complete	moderate	high	high	moderate	moderate	moderate	high
Length of survey	up to 2 hrs	very short	up to 12 pgs	12-15 mins.	up to 1-1/2 hrs	mixed	very short
Size of recommended sample	n/a	large	moderate	small	small	moderate	large
Ability to encourage customer to participate	high	low	moderate	high	high	mixed	low
Ability to provide instructions or explanation to customer	high	low	low	high	high	mixed	low
Require customers to initiate	no	yes	no	no	no	mixed	yes
Respondent's perception of anonymity	moderate	high	moderate	moderate	moderate	moderate	not anonymous
Type of questions	closed & open ended	yes/no	mostly closed ended	closed & open ended	closed & open ended	most closed ended	can be both
Opportunity to probe & ask "why" questions	very high	limited	limited	moderate to high	high	limited	limited
Need for accurate list of telephone numbers or addresses	no	no	yes	yes	yes	yes	no
Allows "branching" & skip patterns***	yes	no	some	yes	some	some	no
Ability to get quick response	moderate	no	moderate	yes	moderate	moderate	high
Response rates	high	low	moderate to high	high	high	moderate	low
Extent of likely bias between customers who choose to participate and those who decline	high	high	some	low	low	mixed	high
Ease of data entry	moderate	moderate	moderate	high	moderate	mixed	high
Extent of data clean-up	low	some	moderate	low	moderate	mixed	low
Ability to generalize results	low	low	high	high	moderate to high	high	low

* Refers to feedback forms or postcards distributed at a point of contact with the customers or included among materials sent to a customer.

** Every nth customer would be contacted using telephone, feedback card or survey form; therefore "mixed" appears frequently in the table.

*** "Branching" is when a particular answer to one question leads to a series of related questions. For example, if a customer cited a product as especially helpful, a series of questions might try to ascertain what, exactly, about that product led to the customer's opinion; if another customer finds a product especially irrelevant, a different series of questions might be posed. "Skip patterns" refer to instructions about which questions to answer and which to skip, depending on the particular answer given to one question.

[on letterhead]

*Mr. John Doe
Alpha, Beta, and Gamma Co., Inc.
555 Main Street
Anywhere*

Dear Mr. Doe:

I am writing to let you know that your name has been selected at random to participate in a survey about customers' experiences with our product/services. You are one of a small group of people we are contacting. Your feedback about your experiences can help shape our future direction.

We at (Organization X) will take findings from the survey into consideration as we plan to improve our services. We are committed to incorporating customer viewpoints and recommendations into our planning, budgeting, and decision making while recognizing the need for balancing sometimes competing and conflicting interests.

(if applicable) I realize that we may have contacted you before to answer similar questions. We are tracking our efforts to respond to customer concerns, so it is very important to hear from you again.

Your responses will be summarized along with those of other respondents and will not be reported separately. Your name and address will not be used for any other purpose. If you do provide us with your name and address they will only be used to enable us to contact you in order to respond to your comments and/or suggestions. Your name and address will not be used for any other purpose. The personal information provided by you on this form is collected under the authority of (legislation X).

You should receive the survey in the next few days. It will take less than 10 minutes for you to complete. Please consider the questions carefully and let us know how we can better serve you. In the meantime, if you have any questions about the personal information collected on this form or any other questions about the survey, please call 1-800-xxx-xxxx to speak to (name of person, title and address) (or someone at YYY Consulting, the firm conducting the survey for you).

Thank you for your time and consideration.

Sincerely,

Signature and title that is meaningful to customer

In most cases, it is better to rely on a probabilistic sample than a judgment sample. Judgment samples may be biased because of the way customers are selected for the study. If a sample is biased, it is impossible to draw inferences about the entire group of customers served. As long as the response rate is high enough, probabilistic samples are not biased, so inferences can be made about the entire group of customers represented by the ones selected.

Determining the Sample Size

If you choose to conduct a mail, telephone, or in-person survey, you will have to decide on the number of people who will be selected to participate. To determine this number—the *sample size*—several factors should be considered, such as the total number of customers served, the intended use of the results, available resources, and time.

- The larger the percentage sampled, the more certain you can be that the feedback obtained will be representative of the results you would have obtained if you received feedback from every customer.
- The smaller the percentage sampled, the greater the likelihood that feedback from those in the sample will differ significantly from those in the full list of customers.

The relationship between sample size and accuracy of findings is called *sampling error*, a measurement that indicates the extent to which the sample of customers is different from the entire group of customers under study. In a news article that reports a program's support rating as 62 percent, plus or minus 5 percent, the “plus-or-minus” value is the sampling error.

To decide the size of the sample, you can either:

- Determine the largest sample size that you can afford and calculate the associated sampling error, or
- Determine the maximum sampling error that is acceptable and select the sample size that will produce that level of error.

The sampling error can be estimated through a *confidence interval*. A confidence interval specifies a range of values within which the true measure is found. Typically, survey results rely on a 95 percent confidence interval, but lower levels are acceptable, depending on how you plan to use the findings. Popular media reports rarely stipulate confidence intervals, but they are implied. Using support for a government program as an example, the unstated premise is that the analyst is 95 percent certain that support for the program is between 57 and 67 percent; that is, 62 percent, plus or minus 5 percentage points, the likely error.

One last point to consider in determining the sample size is the kinds of comparisons that you will want to make with survey findings. Often, analysts are interested in comparing ways in which different customers react to various services. These comparisons may involve large versus small businesses, the general public versus educators, and so forth. If these comparisons are a critical portion of the analysis, you must plan for them in the sample size so that enough of each customer type is surveyed to make the findings meaningful. See **Factsheets III, IV, VIII** for further information on sampling.

Developing the Questions

In deciding the questions to ask customers, it is a good idea to keep two principles in mind:

- 1) make sure the questions and answers address your objectives, and
- 2) set limits on the length of the survey instrument.

The Institute for Citizen-Centred Service recommends use of the Common Measurements Tool (CMT) in Appendix A of this manual. The questions in the CMT have been developed for public-sector organizations and tested in public-sector environments. While you will want to select questions that are appropriate for your organization, the wording has been tested and should remain as is.

Survey questions are generally of two types: open-ended and closed-ended. In open-ended questions, customers create their own answers. The following are examples of open-ended questions:

- Do you have any suggestions for improving service? [IF YES], What are they?
- How could we be more responsive to your concerns?
- Could you please describe the most satisfying experience you have had with us?

Closed-ended questions limit the responses customers can provide. They may include yes/no answers, categories of responses, rank-ordered responses, or scales. The following are examples of each type:

YES/NO

In the past 6 months, have you contacted the XYZ office?

1 YES

2 NO

CATEGORIES

In what kind of community is your business located? Would you say it is:

1 URBAN

2 SUBURBAN

3 RURAL

RANK ORDER

Of the following items, which three are most important to you? Please indicate with a "1" for the most important, a "2" for the next most important, and a "3" for the third most important

REACHING A LIVE OPERATOR

BEING TOLD HOURS OF OPERATION

BEING TOLD OFFICE LOCATION

BEING TOLD EXPECTED WAIT TIME IN PHONE QUEUE

BEING GIVEN A WEBSITE ADDRESS

SCALE

Please rate your satisfaction with the service you received, using scale of 1 to 5. "5" means you are very satisfied, and "1" means you are very dissatisfied.

1

2

3

4

5

With closed-ended questions, it is relatively easy to record and analyze responses, and you will not receive irrelevant or unintelligible responses. However, you risk missing the boat. To illustrate, suppose you ask the closed-ended questions “What was the main reason for your visit?” giving several possible answers, and 30 percent of your respondents mark “other.” Drawing valid conclusions about why customers visited would be hard. If you decide to use closed-ended questions, pretest them to identify all the likeliest responses to your questions.

In developing questions and answers for closed-ended items, the advisability of including response options such as “don’t know” and “no opinion” should be carefully considered. While customers should not be forced into providing responses when they really do not have answers, it is better to find ways to encourage a response than to let customers default to a neutral position. In mail surveys, this encouragement can be accomplished through instructions. In telephone and in-person surveys, it can be fostered by not offering, “don’t know” and “no opinion” as response options.

ON DEVELOPING QUESTIONS

Whatever type of feedback method you choose, allow plenty of time and resources for developing your questions. This process involves several cycles of writing, testing (using actual customers served), and rewriting. Remember, what you are looking for is information your organization can act on, so ask yourself what action you could take with this kind of answer.

Questions that are vague can mean different things to different people. Be specific. For example, you may have identified an issue such as what your customers think of your new application form.

Use questions such as:

- What do customers like or dislike about the new application form?
- Do customers find the instructions on the new form helpful or confusing?
- Is the new form easier or harder to understand than the old form?
- Do customers spend less time filling out the application?
- Do front line staff spend less time answering questions about the form?

Specific questions will be more likely to give you information you can act on to improve your program or services. Ask front line staff for input.

On the other hand, including “not applicable” as a response is important in mail surveys, so that customers are able to indicate this when they have not had a particular experience. In asking questions about a past event, consider giving a “don’t remember” option. Keep the survey to a reasonable length by asking only the questions that address the issues of concern that prompted your survey; leave out the nice-to-know questions.

Recognize that open-ended questions will provide a richness of data that can complicate analysis. Reducing responses to a few categories that can be coded, entered into a database, and analyzed, can be difficult. It is probably best to use a mix of questions, both closed and open, in most customer feedback questionnaires.

If you are planning an ongoing or periodically repeated survey, identify a few key program goals that are unlikely to change very soon, and focus your questions on them. Develop questions that will indicate how well customers think the goals are being met.

These key questions need not be elaborate or profound, but should be very basic to your program. To compare results effectively over time, you should use essentially the same core questions in your survey each time you conduct it. You should avoid making any major changes to these key questions, whether in wording, scaling, or placement, so be sure to ask the right questions from the beginning.

Questions should be developed to fulfill the purposes and objectives of the specific customer feedback activity being conducted. Although this may seem obvious, it is important to remember throughout the development of questions. Be particularly wary of questions that may be interesting to ask, but may only add time and cost while not producing useful information. Some examples are:

- Extraneous questions that do not address the stipulated purposes and objectives of the feedback activity.

- Questions that are subject to misinterpretation. These may have vague words, use unfamiliar jargon, or could be understood differently by different types of customers.
- Double-barreled questions that include more than one item, such as “On a scale of 1 to 5, please indicate how *clear and useful* the materials are.” The customer may have one opinion about clarity and another about usefulness, but is not given an opportunity to distinguish between them in the response.
- Questions that may upset some respondents, such as household income, should be worded neutrally (i.e. whether the customer’s household income falls above or below a certain level) and placed at the end of the survey.
- Questions on matters that customers may consider sensitive or offensive, especially about cultural, ethnic, gender, and socio-economic considerations.
- Questions that do not elicit responses that point to specific remedying actions.

If you do not ask the right questions in the right way relatively soon after the service experience, feedback will not be as useful as it might have been. Also remember that, to compare results effectively over time, you should avoid making major changes to key questions, whether in wording, scale, or order in the questionnaire.

There is no single correct scale to use. However, there are two important issues to consider:

- Whenever possible, the same scale should be used throughout a given questionnaire to help ensure that different responses within a questionnaire can be validly compared.
- Different survey efforts within an organization should use the same scale. To that end, you should consistently use the same scale of one to five when using the core questions described on page 7 above.

Constructing the Questionnaire

No matter what method you use to collect data, all questionnaires follow a similar format:

- Introduction—sets forth the purpose of the survey and guides the customer through the questions
- Customer experience—establishes the customer's level of knowledge regarding various parts of the questionnaire
- Measurement— asks the customer to characterize his or her experiences, needs, and desires as a customer

- Customer information—gathers data that will be used to classify respondents.

The methods used to construct questionnaires differ depending on the mode of data collection used to obtain customer feedback. In the next section, methods are presented for constructing questionnaires for focus groups, mail surveys, and telephone surveys—the most frequently used forms of data collection in periodic surveys to obtain customer feedback.

Determining the Method of Data Collection

FOCUS GROUPS. As knowledge about customer surveys has expanded and entered the public domain, more people claim to be conducting focus groups. It is important to distinguish between focus groups—which are based on scientific procedures and understanding of human interactions—and more casual discussions among people who share a common interest or concern. Both approaches provide potentially useful information, but you should recognize the difference between data from focus groups and data from more informal gatherings.

The key instrument for a focus group is the moderator's guide. This is a series of questions, probes, and discussion topics that are set out in a logical order. The moderator uses the guide to elicit opinions and experiences from participants, and to ensure that discussions stay focused as much as possible on the critical issues around which the group was formed.

SAMPLE MODERATOR'S GUIDE

Typically, a moderator's guide is organized as follows:

- Introductions by moderator and participants
- Review of ground rules, such as:
 1. You have been asked here to offer your views and opinions; everyone's participation is important; the conversation does not need to flow through the moderator, although the moderator will manage the group.
 2. Speak one at a time (avoid side conversations)
 3. Note videotaping, audio-taping, and observers (as applicable)
 4. There are no right or wrong answers; consensus is not required
 5. It is okay to be critical; if you don't like something, say so
 6. All answers are confidential, so feel free to speak your mind
- Brief explanation of the focus group purpose and introduction of the topic
- Definitions
- Questions, probes, discussion topics
- Closing and thanks.

MAIL SURVEYS. The mail survey has to do everything you would do if you were with the customer. It has to be visually appealing, have a pleasant tone, and be clear. The survey instrument is under the direct control of the customer. Its physical look will affect the customer's willingness to respond; the clarity of the instructions and questions will affect the customer's ability to interpret their meaning correctly.

Single-page questionnaires and comment cards should be attractive and easy to read. Longer questionnaires should be printed in booklet form, on 11" x 17" paper that is folded in half and stapled in the middle to produce a standard 8 1/2" x 11" page. The cover should be visually appealing to interest the customer, and no questions should appear on the cover. The cover should give the title of the survey activity and indicate who is conducting the work.

Survey questions should be presented in a logical sequence. Many survey experts believe that the first question on the survey, more than any other, will determine whether your customer completes or discards the questionnaire. Starting with a fairly simple question is a good idea because it suggests to the customer that completing the survey will be neither difficult nor time-consuming. It is also advisable to ask a fairly interesting question to gain the customer's interest.

The next set of questions should focus on matters that the customer is most likely to consider useful or salient. This continues the process of attracting the customer's attention so that he or she becomes engaged with thinking about the questions being asked and becomes interested in completing the survey. Grouping questions together that share common themes makes sense because the customer then focuses on that particular area of inquiry. To the extent practical, you should group questions that have similar types of response options. For example, questions that have yes/no responses should be together and questions that have scale responses should be together.

The order of questions should also mirror the thought processes customers are likely to follow. For example, questions about particular experiences with transactions should precede questions about suggestions to improve those transactions.

The final questions should center on those most likely to be sensitive or offensive. These may include questions about personal characteristics (e.g. age, income).

The final page of the booklet should not contain any survey questions. Instead, it should invite the customer's comments or suggestions about anything raised in the survey or other issues and concerns important to the respondent. It should also indicate the address for returning the questionnaire (in case the survey gets separated from the reply envelope) and, when possible, a toll-free number set up exclusively to receive inquiries about the survey.

TELEPHONE SURVEYS. As customers have no questionnaire in front of them during a telephone survey, concerns about visual appeal are not applicable. Issues regarding ordering and clarity of questions are important, and the same principles apply as with mail surveys.

In-person and telephone surveys involve spoken language which can be very different from written language, and customers must be able to respond to questions based only on the information they hear. So it is critical that your interviewers be well trained and speak clearly. Also, the interviewers act as an intermediary between the customer and the questions posed.

The following principles apply to telephone surveys:

The introduction the customer hears will probably determine whether the interview is conducted or the customer hangs up. The introduction should be concise, state the purpose of the call, estimate the length of the call, and assure confidentiality. Below is a sample:





Hello, my name is (fill in), and I'm with the (your organization or XXX Consulting). We're conducting a survey of people who have received materials from (organization) to learn about their experiences and opinions. Your name and telephone number were only used to enable us to contact you in order to respond to this survey. They will not be used for any other purpose. The personal information provided by you during this survey is collected under (legislation).

We will use the information you provide only to help improve our services and we will keep information about you and your specific responses confidential.

The survey will take less than 15 minutes to complete and is purely voluntary. Is this a convenient time, or would you like to set up a better time for me to call you back?

If you have any questions about the information collected during this survey, please contact the name, title, address and telephone number of the person in (organization) who knows how the personal information will be used.

phone

- Because customers will rely on verbal cues and instructions, rather than written ones, questions should have a limited number of responses (about three or four).
 - Each question should be relatively short.
 - Avoid questions that ask customers to look up information or check with others.
 - In constructing the questionnaire, be sure to read the questions aloud to others to see if they sound clear and understandable. Remember, what works for the written word does not always work for the spoken word.
 - Complex *skip patterns* and *branching* are easily accommodated through computer-assisted telephone interviewing (CATI) systems. *Skip patterns* occur when a particular answer to one question means the respondent is not asked certain questions that would otherwise follow; *branching* occurs when a particular answer to one question leads to a series of questions that are customized to that particular answer.
 - Ranked questions are subject to error in telephone interviews in a way they are not for mail or in-person surveys. Rather than asking a customer to rank a list of eight items for example, it is better to ask the questions in a series of pairs (“Which is more important to you, X or Y?”) or break up the list into a series of separate scaled items (“On a scale of 1 to 5, where 1 is extremely important and 5 is not at all important, how do you feel about X? On a scale of 1 to 5, how do you feel about Y? How about Z?”).
 - When changing subjects, telephone surveys should cue the customer with transitional statements such as, “Now, I’d like to turn to your experiences with...”
 - Instructions for the interviewer must be perfectly clear, and the same format should be used throughout the survey. For example, interviewer instructions are typically written inside brackets, in all capital letters.
- For a sizable telephone survey (more than 50 people, for example), use of CATI should be considered. For large studies, CATI will be more cost-effective and produce more reliable information.

Pretesting

A pretest is a small-scale trial of the instrument and data collection methods. Conducting a pretest is extremely important because the results will provide opportunities for refining the instrument and methods before the comprehensive data collection activity begins. It may seem that a pretest is unnecessary if a survey has been carefully researched and developed. However, even the best plans cannot anticipate all real-world circumstances.

One of the best ways to conduct a pretest is to select individuals randomly from the target group of customers served, invite them to complete the survey according to the method planned for the overall effort, and then participate in a focus group session to review their opinions. If, for example, you intend to conduct a telephone survey, customers should be recruited, come to a central location where they can be interviewed by telephone, then meet as a group to go over the draft questionnaire and their experiences in answering the questions. Those who are involved in the pretest should not be included in the sample selected for the actual survey.

A pretest is helpful for cost projections, and also provides information on the amount of time required to complete the survey.

RESULTS FROM A PRETEST CAN TELL THE ANALYST:

- Whether the flow of questions is logical and orderly
- Whether questions seem relevant and appropriate to customers
- If customers are able to easily understand and respond to questions
- If response categories are adequate
- Whether questions truly reflect the issue to be measured.

Contingency Plan for Non-Response

Occasionally, regardless of planning, there will be times when response rates are simply too low for you to make inferences and recommend action. In these cases, it is important to have a contingency plan for non-response. The plan will include the additional steps you will take to increase the level of participant response. Some potential steps include:

- ***Sending reminder calls or postcards.*** If these steps were not included in the original survey plan, they should be considered if the response is low. If they were included in the original plan, it may be advantageous to repeat them.
- ***Conducting follow-up contact with nonrespondents.*** You may have to make telephone calls or other types of personal contact to nonrespondents to identify the reasons for their non-response. You may want to learn if they understood the intent of the survey and the questions, if the questions were relevant to them, and if there were specific factors that caused their reluctance to respond.

EFFECTIVE QUESTIONS LIST

- Use short statements or questions
- Use simple words
- Avoid jargon
- Be clear and easy to understand
- Arrange questions in logical order
- Use appropriate response choices (include all possible answers and minimize overlap among the answers)
- Do not use double negatives
- Be upbeat and interesting
- Write to the appropriate reading level (9th grade or less for general public. Several word-processing software packages incorporate a feature that determines reading level)
- Use questions pretested in other surveys whenever possible
- Leave out the questions that are nice to know but not vital to the success of the program/product/service

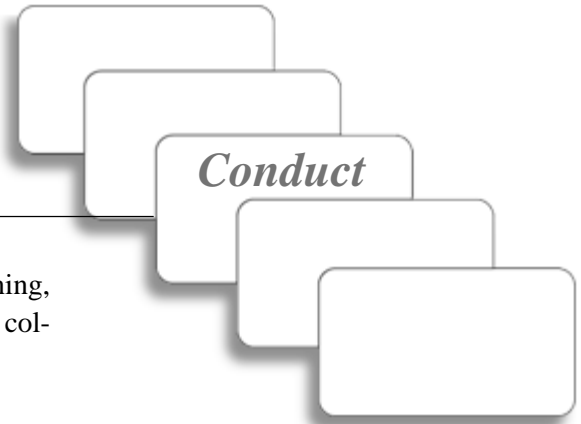
- **Improving contact information.** It may be that many addresses or phone numbers of the target group are incorrect or out-of-date. Improving this information would very likely improve the response rate. Places to check include the Internet, and business directories.
- **Revising survey instrument.** In some instances, some of the survey questions may make respondents feel uncomfortable or unable to respond, so you may have to revise the instrument.

Some of these steps may require a great deal of effort, time, and money. You should carefully consider the various options. If the response rate remains too low, you may have to wait for a better time and a different customer base, or you may wish to rely on direct conversations with customers.

CONSTRUCT checklist

- > Design the sample
- > Decide method for collecting data
- > Choose an approach
- > Develop the questions
- > Prepare package for approvals
- > Construct the questionnaire
- > Pretest
- > Finalize

3 Conduct Data Collection



Whatever methods you choose for collecting data, adequate planning, training and quality control are essential to ensure that the data collected meet certain standards, namely that the information is:

- Timely
- Accurate
- Efficient
- Useful
- Reliable
- Valid

Focus Groups

A focus group project typically involves several steps:

- Compose an effective script to recruit participants.. Use this tool to create dialogue between the person recruiting participants and the customer and to qualify potential participants considering factors such as age, education and household income.
- Invite individuals who meet requirements to participate in the group. You should recruit about 12 qualified participants for each focus group allowing for last-minute change of plans and illness. The moderator should expect that about nine will attend.

Several practices can maximize the efficiency of the recruitment process:

- Well before the group meets, mail a letter to participants that confirms the date, time, and location of the group and states whether the respondents will be paid for participating. The letter thanks the participants, gives directions to the focus group facility, and repeats the general objectives of the focus group.
- Decide whether to provide transportation to the focus group facility for those participants who need this service.

- On the day of the focus group (or the previous day, if the group is scheduled for the morning), make a follow-up telephone call to the participants to remind them to attend.

Running a successful focus group also requires managing logistics, such as:

- Arranging for focus group facilities and refreshments
- Providing videotaping and audio taping equipment or people assigned as recorders
- Providing a video hookup between the room where the focus group will meet and the room where you (or others) will observe the focus group (if this is part of the design)
- Coordinating participants' schedules.

It is a good idea to use both a qualified moderator and an assistant to conduct the session. The moderator will pose questions to elicit candid opinions from the participants, keep the discussion moving, cover all topics in the discussion guide, recognize when participants bring up valuable new information, and steer the discussion in that direction if warranted. The assistant supports the moderator as needed, takes notes, and handles logistics.

Mail Surveys

In setting up data collection procedures for a mail survey, a good database is important. The database should contain, for each customer, the customer characteristics relevant for the sample selection (such as geographic location, or date of last contact), name and address, mailout date(s), and the date the response is received. This database is a tracking system.

A mail survey typically involves several separate mailings, each of which they call a “wave.” Send out each wave of a mail survey on the same date:

- If you use an advance letter, mail all advance letters to customers on the same day.
- About a week later, mail the first questionnaire to all customers. Attach a label with the unique identification number to each questionnaire. Include a letter in the package that refers to the advance letter, asks for cooperation, and provides a telephone number (toll-free, if possible) for customers to call if they have questions. The package should also contain a prepaid, pre-addressed envelope for customers to return the completed survey.

As completed questionnaires come in, record their return in the tracking system. Similarly, as undeliverable questionnaires come back (e.g., the customer has moved and left no forwarding address or the address is incorrect), note that they were undeliverable in the tracking system.

- About three weeks after mailing the first questionnaire, send out the second copy to all those who have not yet responded. The letter in this packet should note the importance of the study and ask customers to respond. The second copy

of the questionnaire should be a different color from the first version. This distinguishes between the two copies, sends a signal to customers, and aids efforts to track responses.

The following often help improve response rates:

- The advance letter (if used) should be on official letterhead, with a signature or title that is meaningful to customers
- Any signed correspondence should use a real signature rather than a rubber stamp (scanning in the signature can work well for many letters)
- Use “address correction requested” to get information on customers whose surveys cannot be delivered, then use the corrected information in the next mailout
- Use a large enough envelope so that the survey booklet does not have to be folded
- Establish, when possible, a toll-free number for the duration of the data collection period, and encourage customers to call with questions or comments
- Allow respondents to fax back the completed survey
- If the budget permits, send out a third mailing via registered mail or use an overnight delivery service (this is a last resort and may produce only minimal results).

Data from mail surveys must be key-entered or scanned. It is usually most cost efficient to wait until you have a sizable batch of completed surveys before beginning data entry

Telephone Surveys

Whether using Computer-Assisted Telephone Interviewing technology (CATI) or a traditional paper-based technique, you must train telephone interviewers specifically on the study's questionnaire and data collection procedures. The following are topics to cover during interviewer training sessions:

- **Background and scope of the survey.** Provide interviewers with general information about the background and scope of the project. Explain the types of information to be collected and the ways the information will be used.
- **Review of the questionnaire.** A person responsible for data collection goes through the questionnaire and leads an item by item discussion.
- **Dealing with uncooperative respondents.** Experienced staff lead discussions about ways to start off the interview right, enlist cooperation, build rapport, and minimize breakoffs and nonresponses. The interviewers will also review strategies for ways to manage challenging situations.
- **Answering customers' questions.** Some frequent questions are:
 - How was I selected?
 - What is the survey about?
 - Who is conducting the survey?
 - Who wants to know these answers?
 - How will the information be used?
 - How long will this take?
 - Will I be identified?
 - How do I know you are who you say you are?

- **Quality control procedures.** Monitor matters such as posing questions accurately, tone, courteousness, and responsiveness to customers' concerns throughout the survey, and review these procedures with interviewers. Telephone interviews for any sizable study are usually conducted using CATI technology. CATI systems use computers to facilitate the interviews, which is a vast improvement over traditional paper-based systems because CATI:

- Greatly reduces the possibility of mistakes
- Ensures accurate recording of the survey response
- Instantly establishes a tracking system and a record of each call
- Provides significant improvements in quality control and efficiency
- Allows complex branching and skip patterns.

When using CATI, the computer automatically handles tasks such as controlling pace, organizing which questions are to be asked and which are to be skipped, rejecting invalid or unlikely responses, and recording closed-ended and open-ended responses. This enables the interviewer to focus on smooth delivery and good interviewing skills. It also eliminates the need to enter data after the survey is completed. The net result is a higher-quality interview and more reliable information.

Electronic Feedback

Internet surveys use a web-based form that the user completes on-line at a designated web address. You should only consider this method of data collection if the potential respondents have access to the Internet.

To administer an Internet survey, you must have a method of contacting the people selected for the sample. After compiling the sample list, send an e-mail alert that will lead potential respondents to the survey web site. Upon entering the website, respondents can then log in and take the survey. Internet surveys have several advantages:

- They are interactive, like telephone surveys, allowing programmed skip patterns and links to more detailed survey instructions. Unlike a telephone survey, respondents can see the questions.
- Respondents can complete the questionnaire at a time convenient to them.
- There are no calling or mailing costs.

E-mail surveys are one of the fastest and least intrusive means for gathering customer feedback. Up to 50 percent of the responses are received within 24 hours. They are also cheaper to conduct since you pay no interviewers or printing and distribution costs. In addition, the survey will definitely get to the right individual; they will usually not be intercepted and routed to another person.

However, there are also some disadvantages. For example, it is likely that respondents will have no perception of anonymity. Also, as e-mail use increases, people are becoming less patient with the many unsolicited messages they receive.

On-Line Focus Groups

On-line focus group research offers exciting new possibilities for on-line conferencing. Traditional focus groups require:

- The rental of a physical facility, transportation for participants, refreshments, recording facilities for transcription purposes, and time set-up and clean-up
- The recruitment of participants from the immediate local area
- Travel costs for moderators who must be located at the same site as the participants.

On-line focus groups overcome many of these limitations. Features of on-line focus groups include:

- The ability to restrict access to pre-authorized participants

- Automatic production of instant word-for-word transcripts
- Use of on-line survey forms without leaving the focus group
- Use of on-line participant profiles filled out in advance (reducing the need for “get acquainted” activities)
- Elaborate electronic moderator discussion controls
- Display (with no action needed by participants) of discussion materials such as PowerPoint slides, Excel charts and spreadsheets and other text materials, photographs and other visuals, live web sites and their contents, live pictures from web cameras, and even streaming audio and video

The ability to continue discussion on a split screen while viewing materials such as those described above.

CONDUCT

checklist

- > Choose an approach
- > Design the sample
- > Decide method for collecting the data
- > Develop the questions
- > Prepare package for approvals
- > Construct the questionnaire
- > Conduct a pretest
- > Finalize

4 Analyze the Data



Throughout the customer feedback activity, the framework for analyzing findings should be established and modified. An *analysis plan* is a useful tool for organizing the data analysis. The analysis plan should specify how your organization will analyze the survey responses to deliver the desired products. The plan is helpful for making sure that the data you collect will answer the overarching questions being posed, for ensuring that you do not gather extraneous data, and for setting expectations about the kinds of information that will result from the customer feedback activity.

You should include two important items in the analysis plan:

- 1) the designation of dependent and independent variables, and
- 2) the stipulation of the unit of analysis

A *dependent* variable is the phenomenon you are investigating. The dependent variable may be the degree of customer satisfaction with a specific product or service. *Independent* variables help explain the observed level of the dependent variable, and may include factors such as differences in the nature of the product or service (e.g., customers were consistently more satisfied with one service than with another), frequency and type of interaction, and customer differences (e.g., educators, students, local planners, and small business owners using the same service).

The *unit of analysis* is what you are studying. In customer feedback surveys, the unit of analysis will, in most cases, be the individual *person served*. When you use *continuous feedback* methods, the unit of analysis will generally be the individual *customer transaction*. For further discussion of unit of analysis, see **Factsheet VII**.

Data Clean Up

Once you have set up the database and entered all the data, you must review and prepare them for analysis. This may entail a broad set of activities, such as deleting cases that left all answers blank on a mail survey and coding open-ended responses into categories.

Generally, this is the time to run a set of frequencies to show the number of responses of each kind to each question (the number of yes and no answers to a yes/no question) and the total number of responses of all kinds to each question. This quick analysis gives you a rough check on the completeness and accuracy of your data (the total number of responses to any one question cannot exceed the total number of respondents and rarely will differ greatly from the total number of responses for each of the other questions). Frequencies flag out-of-range values (i.e., responses to one question which are so different from responses to similar questions that you doubt their accuracy).

Types of Data & Analysis

Data from focus groups tend to be qualitative in nature. Analysts may tabulate data from focus groups, such as “x percent of the participants expressed satisfaction.” You should treat these numbers cautiously and not generalize them to the full set of customers because:

- 1) focus groups usually have only a relatively small number of participants, and
- 2) participants may have been recruited because they had specific experiences or characteristics. You may review transcripts from focus groups to detect patterns and inconsistencies or you may apply more rigorous content analysis.

For quantitative data you can produce a variety of statistics:

- Descriptions of central tendencies, such as the mean (the average value), median (the middle value - half are larger and half are smaller), or mode (the most frequently occurring value).
- Other descriptive statistics, such as frequencies, percentiles, and percentages. In customer satisfaction surveys, the most commonly reported result is the percentage of respondents who expressed satisfaction with a specific aspect of a service.
- Cross-tabulations that array independent variables against the dependent variable (for example, geographic location of customer against a summary measure of customer satisfaction, like the percentage of customers of each type who reported being satisfied with the product or service they received).
- Statistical analysis such as factor analysis, analysis of variance, and regression analysis including multivariate analysis to determine the relationship between and among selected variables.
- Chi-square, z scores, t-tests, and other statistics to determine statistical significance.

If the survey is repeated, there is an opportunity for time-series and trend analyses to determine long term changes and seasonal and cyclical patterns in the data.

The following table contains information about the statistical techniques that will most likely meet all the needs and expectations of the program or project conducting feedback:

STATISTICAL	TECHNIQUE	EXAMPLE
Mean	To determine the average response	The mean rating for overall satisfaction is an 8.4. (Sum of all scores divided by number of respondents)
Median	To identify the middle response	The median score for overall satisfaction is a 9. (When responses are listed in numerical order, the middle response if odd number of respondents, or the average of the two middle responses if even number of respondents)
Mode	To determine frequency of response	If you surveyed 50 people and 26 rated the service 2, out of 5 the mode would be 2.
Frequencies	To summarize the distribution of responses	67% of respondents rate overall satisfaction a 9 or a 10.
Cross-tabulations	To summarize the distribution of responses by another variable	78% of Toronto respondents rate overall satisfaction a 9 or a 10, compared to 60% of Timmins respondents.
T-Test	To test for statistically significant differences between two independent groups	Windsor respondents are significantly more satisfied overall than Kingston respondents.
Analysis of Variance (ANOVA)	To test for statistically significant differences between three or more independent groups	Overall satisfaction differs significantly among Timmins respondents, Kingston respondents, and Windsor respondents.
Correlation	To determine how responses to one question predict responses to another question (measures the strength of relationship between variables)	Of all aspects of the office, satisfaction with the cleanliness best predicts overall Satisfaction. (Respondents who are satisfied with cleanliness tend to be satisfied overall, and respondents who are dissatisfied with cleanliness tend to be dissatisfied overall)
Regression	To analyze the effects of a relationship among responses to two or more questions (measures the effects of one or more variables on another variable)	As satisfaction with cleanliness decreases, overall satisfaction decreases.

Analyses: An Example

The following is a simple example of how you might analyze data from customer feedback. Suppose your organization has distributed several thousand copies of the ABC Booklet, and because you want to know how satisfied customers are with the booklet, you asked 450 respondents to complete a survey that included:

On a scale of 1 to 5, where 1 represents “highly dissatisfied” and 5 represents “highly satisfied,” how would you rate your satisfaction with the ABC Booklet?

If you were to tabulate all the scores, the average response score would be the mean. Although the mean is a very important piece of information, there is a lot more you can do with the data from your customers. It is often useful to begin with a frequency distribution where you determine the number and percentage of respondents who gave each score between 1 and 5. Here is one way to present that distribution:

CUSTOMER SATISFACTION WITH THE ABC BOOKLET (n=450)			
SCORE	NUMBER	% OF THOSE EXPRESSING AN OPINION	
		OUT OF 393	OUT OF 450
1 – Highly dissatisfied	42	11%	9%
2	27	7%	6%
3	122	31%	27%
4	132	34%	29%
5 – Highly satisfied	70	17%	16%
SubTotal	393	100%	87%
Don't Remember	22	-	5%
Don't Know	35	-	8%
Total:	450	-	100%

This example points out several items you should consider.

First, of the 450 customers responding to this question, 22 did not remember receiving the booklet and 35 said they had no opinion or did not know how they would rate their satisfaction with the booklet. In the example provided above, the information about those who do not remember or have no opinion is presented outside the table because the analyst decided it was more important to focus attention on those who did have opinions to express. The percentage of those with opinions based on the 393 respondents is presented in column 3.

If it is important to determine the percentage of customers who do not remember or who have no opinion about the booklet, you would calculate those figures using 450—the total number who were asked the question—as the denominator. Thus, using 450 as the total number of respondents, percentages of people with opinions are calculated and presented in column 4.

Second, the information may be too detailed for many people in your organization to whom you will be presenting the results. The difference between a 1 and a 2 rating, for example, may not be meaningful for them. Thus, you may find it useful to collapse the information into a smaller number of categories. One possibility is to create three categories: dissatisfied, neutral, and satisfied.

CUSTOMER SATISFACTION WITH THE ABC BOOKLET (n=450)		
SCORE NUMBER	NUMBER	% OF THOSE EXPRESSING AN OPINION
Dissatisfied	69	18
Neutral	122	31
Satisfied	202	51
Total:	393	100

Don't remember receiving the ABC Booklet: 22 (5 percent of 450)

Don't know/no opinion: 35 (8 percent of 450)

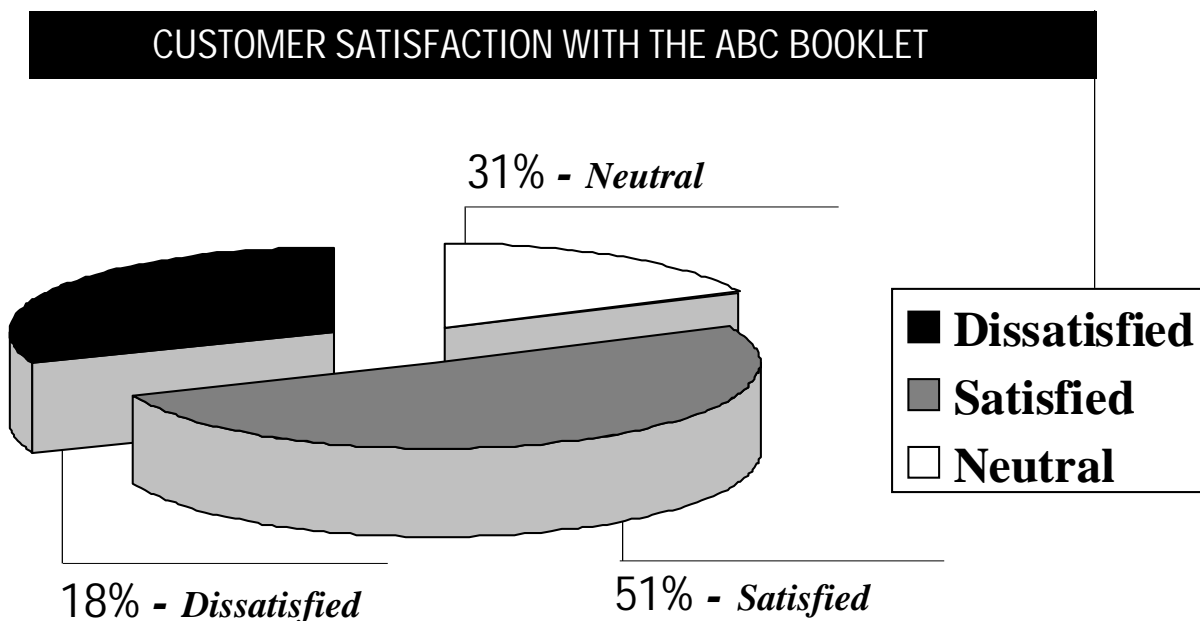
Note that the information can now be grasped much more immediately. It is reasonable to ask why the question posed to customers has 5 possible answers when the responses will eventually be collapsed. Research has shown that people answering survey questions prefer to have a fairly wide range of responses because they do not like to feel forced into a limited set of options. In addition, analysts may have different approaches to collapsing categories. As well, a range of responses produces variability in response levels.

If you are analyzing the data to help you make service improvements, you may not want to collapse the data because the difference between satisfied and very satisfied is important. When you collapse the data, you miss

information you will need in analyzing and planning improvements.

The responsibility for reducing information to a manageable amount falls to the analyst. It is the analyst's task to identify sensible ways to collapse categories and to present these decisions to the audience (often as a footnote or technical appendix).

Third, as discussed in the next section, you should consider how to present the data. Although these tables are simple and easy to interpret, compare them to a chart that summarizes the information instantly.



Fourth, the analysis you anticipated during the planning phase of the customer feedback activity should help you determine whether you should do subgroup analysis. Subgroup analysis examines whether different kinds of customers have different kinds of responses. Suppose you want to examine whether researchers and stakeholders have the same or different opinions about the ABC Booklet. You could collapse categories and sort respondents by their status as researchers or stakeholders (some respondents may be both researchers and stakeholders, but for simplicity, assume your customers indicated their primary role), then present the findings:

SELECTED CUSTOMERS' SATISFACTION WITH THE ABC BOOKLET (n=263)				
RATING	RESEARCHERS		STAKEHOLDERS	
	NUMBER	PERCENT	NUMBER	PERCENT
Dissatisfied	27	17	17	16
Neutral	94	60	78	73
Satisfied	35	22	12	11
Total:	156	99*	107	100

* Total is less than 100 due to rounding.

This table provides important information to the audience, but you might want to present it using charts for the two separate groups. You could also perform a statistical test to see if the two groups differ significantly in their satisfaction with the ABC Booklet.

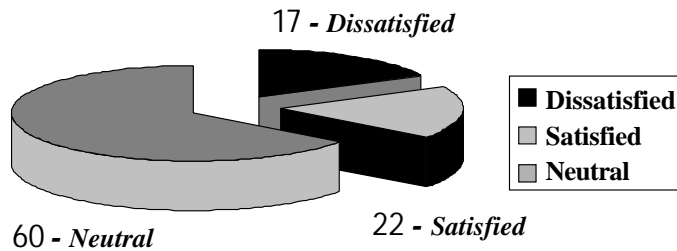
Fifth, you should consider the adequacy of your findings. Many factors affect adequacy, such as the sample size, response rate, and objectivity of questions posed—plus the way you will use the findings. With a sufficient sample size, a good response rate (more than 75 percent for mail and telephone surveys, for example), and questions that are not biased, you can use the information with confidence. Eighty percent response rate for survey results is usually considered to be statistically valid

However, when less than 80 percent of those sampled return questionnaires in a customer feedback and satisfaction measurement activity, the information gathered should still be used to improve customer service. You should not ignore the findings. Suppose that, in the above example, there was an additional group of people — stakeholders — who were your customers, and that a total of 17 stakeholders responded to your survey. This is a small number and therefore the sampling error for this one group of customers may be quite high. Nevertheless, you should pay attention to the results.

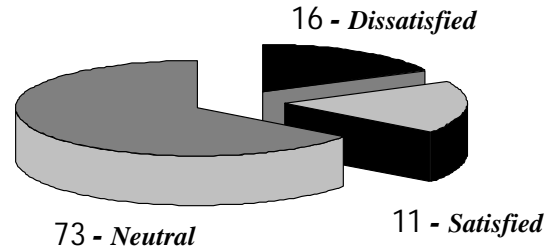
One final comment on this example: A large number of organizations have customer bases much smaller than the numbers used in the example. If your customer base is quite small, you must first decide whether a statistical sample and quantitative survey is still viable because other techniques may be more suited for your purposes. If you decide to go ahead with a survey, recognize that the analyses you conduct should be carefully considered and constructed.

SELECTED CUSTOMER'S SATISFACTION WITH THE ABC BOOKLET

Researchers



Stakeholders



Sixth, you may want to consider how past responses compare with the new responses, and to ensure that you can compare the current results with future responses. This is time series or trends analysis, and it is vital to measuring change.

Even if your sample does not adequately represent the larger group of stakeholders who are your customers, you can still:

- Decide whether the findings are suggestive (rather than definitive). Should you pay attention to the concerns suggested by these findings?
- Compare the findings to other similar data. Are stakeholders generally pleased or displeased with other products?
- Compare the findings to information you get from continuous feedback methods. If you call stakeholders after providing a service or product, what do they have to say?
- Compare the findings with the results of this survey.
- Discuss the findings with colleagues. Have they received similar reports? Is there a pattern emerging about stakeholders' level of satisfaction with products?
- Raise the findings with program managers, being careful to note that this might be an area that requires attention to improve customers' satisfaction
- Investigate the findings further. Should you use this as a starting point for more in-depth discussions with stakeholders? Should you conduct focus groups to see how products could achieve higher levels of satisfaction?

“A reasonable probability is the only certainty.”

E.W.Howe

Driver Analysis

An analytical approach that is very useful in customer research is driver analysis. Driver analysis identifies the service or services that most significantly affect respondents' satisfaction. This type of analysis provides decision makers with a tool to put the findings in priority, which is important because customer feedback efforts often yield more information than an organization can deal with. Also, you may not have enough resources to adequately address all aspects of customer service that receive low satisfaction ratings. Driver analysis enables you to identify which areas deserve the highest levels of attention.

As an example, assume that a program is assessing three ways of providing information: by telephone, by mail, and through published materials. Analysis of customer feedback can identify which of these methods results in the highest level of respondent satisfaction. This is the delivery system that most strongly drives satisfaction with the program's products and services. When you identify the method that significantly affects satisfaction, additional analysis can determine which factor within that method most significantly affects satisfaction.

Continuing with the example, assume that you identify information received by telephone as the method producing highest satisfaction. You can also use driver

analysis to identify the factors that most affect the respondent's opinion. Such factors may include one or more of the following: the accuracy of the information, the courtesy shown by the employee, or the accessibility of the correct person to answer the question. Identifying the driver in this way greatly enhances your ability to set priorities for improvement efforts.

Two primary analytical techniques, stated importance and derived importance, are used in driver analysis:

Stated importance uses respondents' answers to specific questions regarding the importance of the services. The respondent ranks or rates items on a prescribed scale (such as a scale from 1 to 5) according to their importance.

Derived importance uses multivariate analysis to identify the most important factors affecting satisfaction. In short, the overall level of satisfaction with the program is compared to the levels of satisfaction with particular products or services received. Driver analysis will identify the degree to which variation in the overall level of satisfaction is explained by the variation in the product or service received. Those individual products or services that most adequately explain the variation in overall satisfaction are the drivers.

The following table provides a useful method of comparing importance data from driver analysis and satisfaction data. When the answers to a question are plotted according to the levels of importance and satisfaction, some helpful inferences can be drawn.

		<div style="display: flex; justify-content: space-around; width: 100%;"> 2 1 </div>	
		<ul style="list-style-type: none"> • Important to customers • Poor performance • Customer expectations not being met 	<ul style="list-style-type: none"> • Important to customers • Better performance • Customer expectations being met
<i>I m p o r t a n c e</i>	HIGH	<div style="display: flex; justify-content: center; width: 100%;"> 3 </div>	<div style="display: flex; justify-content: center; width: 100%;"> 4 </div>
	LOW	<ul style="list-style-type: none"> • Less important to customers • Poor performance • Low customer expectations matched to poor performance • If importance increases, performances will become an issue 	<ul style="list-style-type: none"> • Less important to customers • Better performance • Clearly exceeding customer expectations • Efforts may be unrecognized, priorities misplaced*
		LOW	HIGH
<i>S a t i s f a c t i o n</i>			

**In quadrant four, the importance of the service is low and customer satisfaction is high. In this case, you should redirect your efforts to the issues in quadrant 2 where importance is high but satisfaction is low. Alternatively, if you think the factors in quadrant four should be considered more important to customers, you may move them to quadrant 1.*

Presenting the Data

One critical activity is to remove all information from the data that identifies the customer. To ensure credibility and confidentiality, you should never present findings that could be used to identify a specific customer. A typical practice is to strip names, addresses, and telephone numbers from the analytical database and keep them in a separate file that includes the unique identification number assigned during the data collection activity. If warranted, you can link the file with identifying information with customer feedback through the identification numbers.

Most people are interested in the bottom line, presented as succinctly and clearly as possible. Therefore, it may be best to present the data reflecting survey results in simple, straightforward ways to most audiences and save the mathematical details for an appendix or supplementary briefing. Many audience members want a brief summary of the study's findings. You should consider preparing an executive summary and using it as the basis for preparing an overhead presentation.

Graphic representations of data are powerful displays of findings. It is very easy for audiences to grasp information presented in bar graphs, pie charts, and similar designs. The rapid growth of low-cost colour printers means that these displays can be easily produced in colour, adding to their ease of understanding. Examples of graphs are presented in *Factsheet VII*.

Formulating Recommendations

Customer feedback may suggest many potential improvements or enhancements to consider. Narrowing down the list to those that will have the most direct effects on overall customer satisfaction is the ideal. Most branches have limited staff and other resources, so practical considerations must guide your choices.

Each organization will consider its own capacity for action. However, it is important to do something or customers may feel that their input was not valued and the effort they expended to respond was wasted. Recognize too that not everyone will be ready for the feedback results. Presenting them can raise issues for some individuals.

To get support and influence change, results must be honest and presented in a constructive way that emphasizes the positives. Results, findings, and recommendations should be presented as opportunities for improvement. If the survey cannot be used to influence change or improvement, it did not meet its objective, no matter how carefully the whole feedback activity was conducted.

Developing Recommendations

Whether you should develop recommendations depends on the purpose of the feedback activity, the significance of the issues, the quality and significance of the findings, and the audience. Your original purpose should be action-oriented; answers to your issue questions should naturally lead to ideas for actions that would improve program effectiveness.

If you develop recommendations, they should be feasible, supported by the findings (which are in turn supported by the data), and stated unambiguously. Providing a list of options for achieving a recommended improvement may increase the likelihood that it will be implemented.

Another critical, although sometimes subtle, consideration in developing recommendations is the climate within your organization. Some recommendations, no matter how well you support them, will not be accepted due to factors beyond your control. Be aware of these factors so that you can develop an alternative recommendation or recognize that your recommendation may not be implemented until the climate changes.

Presenting Recommendations Using Graphics

Remember, at least 70 percent of the message is visual, so take advantage of the way people take in information. Use the right visuals to communicate your message. You can:

- Emphasize main numerical facts
- Uncover facts, trends, comparisons and relationships that might be overlooked in text or a table
- Summarize, group or segment (stratify) data
- Add variety and interest to text, tables, and briefings.

It is best to use pie charts to display components or parts of a whole. Use line charts to show independent or cumulative values when:

- Your data cover a long period of time and several series are compared on one chart
- You want to show change, not quantity

- You want to show trends
- You want to show relationships
- The plot or the series fluctuates sharply.

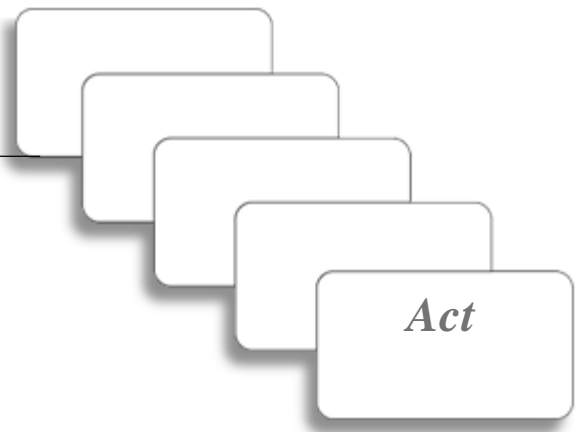
Do not use column charts for comparing several data sets, showing data with many plots, or showing a number of components.

Finally, use picture graphs to demonstrate concepts or ideas. (See **Factsheet VII** for examples of graphics.)

ANALYZE CHECKLIST

- ✓ Clean up data
- ✓ Determine the appropriate types of analysis
- ✓ Perform analyses
- ✓ Present data
- ✓ Formulate conclusions and recommendations based on the data
- ✓ Present the recommendations

5 Act on the Results



Is this the Beginning or the End of the Process?

When the efforts to collect customer data appear to be coming to a close, your real work may just be starting. If this is the first time your organization has collected and analyzed customer data in a systematic way, you are probably discovering a new world of information. Depending on the feedback method you have chosen, you have probably created a baseline of information that characterizes how your customers evaluate your products and services. You may wish to repeat the same process again in a year, or in whatever period of time makes sense in your situation.

Customers who respond expect you to act on their feedback and to tell them what you have done. Whenever possible, you should build in some way to let them know.

To be cost effective, your organization wants to make best use of the information. Therefore, this next stage of the process is vitally important to the success of the final phase—action planning and implementation

How Do You Decide What to Do with the Feedback?

Once you receive and analyze the feedback, most people will be anxious to know the results. How did we do? What's the bottom line? You should avoid giving answers that oversimplify the feedback you have received. Depending on the methodology you have used, you may have an average score or rating to report, but chances are that you will have more information that can provide a wealth of insights about how your customers view the products and services they have received from your organization.

How Good is Good Enough?

The only real way to answer this question is to say that it depends. For example, is an average score of 3.9 on a 5-point scale a good score? If last year's average score was 2.5, indeed you may have reason to celebrate—and for more than one reason. For one thing, your score has nearly doubled. Even better, it has leaped from the dissatisfied range to the middle of the satisfied range.

However, you may want to look deeper. How does the customer rate other service providers who provide similar services? Is that organization getting ratings above or below the 3.9? What about the distribution of ratings—are some customers still rating your service below a 2.0 while some are rating it above a 4.5? If so, the more positive ratings may be obscuring the negative ones. You still may have customers who are critical of the products and services you provide.

Setting acceptable goals for customer satisfaction ratings is a decision that each organization must make for itself. Keep in mind, however, that leading service organizations tend to:

- Target overall satisfaction scores at the upper end of the scale. On a 5 point scale, that should be a 4.0, and in very competitive situations it may even be at the 4.5 level or higher.

View any less-than-satisfied ratings as unacceptable because they indicate an opportunity for dissatisfied customers to quickly convey their dissatisfaction to others by word of mouth. In the long run, that can undermine your efforts to achieve a reputation for service and product excellence.

How Do You Know What to Work on First?

Many organizations are overwhelmed with the amount of information they receive from customers. This is especially true if a survey instrument is lengthy, or if there is a large number of open-ended comments and ideas. Decision makers, particularly at senior executive levels, are likely to ask these questions: What do we do first? What actions will yield the best improvement in overall customer satisfaction? What improvement or enhancements are worth making?

During the planning phase, you and your colleagues will have identified potential methods and procedures for acting on the results of customer feedback activities. The following are some ideas to consider.

Recover. Be prepared to hear from customers who report a negative experience. Set up a quick alert and response mechanism to respond in a case such as this. (It may require a special question that asks if the respondent is willing to be identified and contacted for follow up. A quick response is a very positive way to convert a negative impression into a positive one for the customer.)

Report. Even if the primary means for action is an oral briefing, preparing written documentation for others to read and refer to is critical. It also creates a historical record for tracking changes over time. Most people who will review information about customer feedback want to see graphics and summary tables. Reports may include an executive summary, a description of the study objectives and data collection methods, a comprehensive overview of findings (illustrated with graphs and tables), and conclusions and recommendations. To keep the report a reasonable length, supplementary material can be presented in appendices.

Hold a briefing. Gather decision makers together and go over the findings with a verbal presentation. Software graphics packages can help make the briefing interesting and informative. Conducting a dry run before your presentation helps with timing, pacing, and finding out how well you can verbally communicate your written findings.

Hard-copy handouts give participants a tangible reminder of the information.

Set priorities. It is likely that customer feedback will provide a wealth of information. Try to package the information so that it leads the audience or reader to a series of practical action steps that fit together logically. Acting on results may be more successful if several smaller action plans are developed that contain three to five next steps, rather than one large plan that may appear overwhelming.

Communicate. In addition to holding a briefing, it is a good idea to communicate results to others. Sending a thank-you letter to focus group participants and customers who completed the survey is important. The letter should note what was learned and what will be done with the findings. Also, employees are often eager to learn what customers have said, so you should summarize the results and distribute them within your organization.

Improve. There is no reason to elicit customer feedback unless you will use the information to improve processes, services, or products. The best way to use customer feedback may be to develop action plans. Action plans are most likely to be successful when owners of each issue can:

- Be identified and included
- Help assess their activities and customers' feedback
- Participate in review and strategy sessions
- Have an opportunity to discuss concerns and shortcomings.

Enhance. Sometimes customers are satisfied, but want the organization to expand or further improve what it offers. This is an opportunity to enhance products or services.

Reward. Conducting customer feedback activities can be exciting and worthwhile; the process can also be exhausting and threatening. You should recognize the efforts of staff and customers who made the activity

possible and reward them for their involvement. Rewards can take the form of public acknowledgment, mention in performance reviews, and attention to findings.

Plan. Use the immediacy of the customer feedback activity to see what worked well and what could be improved for the next similar activity. Identify aspects that facilitated or impeded achieving the project's objectives, including features of the processes followed for planning, data collection, analysis, and development of findings.

Where meeting the objectives in the action plan resulting from the customer service survey requires additional resources, you may have the opportunity to incorporate the survey results along with the action plan in your organization's annual business planning and allocation process.

FACTSHEETS

Who Are Your Customers?

FACTSHEET I

The following table can help you get started in identifying your particular customers and the products and services they receive from you.

SERVICE RELATIONSHIP	EXAMPLE OF CUSTOMER GROUPS	TYPE OF PRODUCTS/SERVICES
Transactional	Individuals, businesses	Drivers licenses Birth certificates Information Permits
Advisory	Individuals/businesses/industries/ sectors (e.g. agriculture)	Program advice Information Referrals Financial assistance Guidance Access to decision making
Regulatory	Industries, small business operators	Permits Compliance enforcement Hearings Facility inspections Due process
Negotiations	Intergovernmental, professional associa- tions, bargaining agents	Agreements Dispute resolution
Funding	Schools, hospitals, community based services, vendors (e.g. pharmacists, oxygen suppliers)	Transfer payments Co-payments Information Advice Program support
Internal	Employees	Human resources support Facilities Financial management Training Information technology Audit and evaluations Legal services
Data and Information	Individuals, other governments, busi- nesses, industries	Data collection Access to data Research
Justice	Individuals, offenders, interest groups	Policing Crime prevention Legal defense Parole Incarceration Victim/Witness Assistance Court services

Freedom of Information and Protection of Privacy

FACTSHEET II

Background for discussion with your freedom of information and privacy coordinator about personal privacy issues

This basic summary of the requirements should only be used as a basis for discussion with your Freedom of Information coordinator.

TOPIC	SOME BASIC INFORMATION
1. Personal Information	Any Information about an identifiable individual, including but not limited to: name, address, sex, age, education, member of visible minority.
A) Collection of Personal Information	You can only collect personal information if: a) The collection is specifically authorized by statute or, b) The collection is used for law enforcement or, c) The collection is necessary to properly run a program or activity of the organization that is permitted by law.
B) Collection of Personal Information	When you collect personal information, you must notify the person of: a) The legal authority for the collection, b) The main purpose(s) for which the personal information is intended to be used; and c) The title, business address and business telephone number of an officer or employee of the organization who can answer the person's questions about the collection.

I. Collection of Personal Information

You can usually only collect personal information from the person to whom it relates unless you have their consent to get it from someone else. There are a few specific technical exceptions to this rule.

II. Use and Disclosure of Personal Information

You can usually only use or disclose personal information for the purpose for which it was collected or for a consistent purpose—a purpose the person would have reasonably expected. There are a few specific technical exceptions to this rule.

III. Destruction of Personal Information

You generally have to retain personal information for one year after the date it was last used. You can destroy the information earlier with the consent of the person to whom the information relates.

Sampling - The Basics

FACTSHEET III

If you have decided to use a survey approach for obtaining customer feedback, you need to determine what sample size to use. This Factsheet discusses sample sizes, sampling error, and confidence intervals—all of which factor into decisions about the sample size. It then presents a table for you to use in determining sample size and tells you step by step how to make use of that table. The Factsheet also describes how to go about randomly selecting the number of customers from the total list of customers you have served during the time period to be covered by the survey.

Before reviewing specific guidelines on how to choose the sample size, it is useful to set some general expectations. National public opinion polls typically use sample sizes in the range of 1,350 to 1,800. These polls use fairly large sample sizes to obtain a result that represents the entire adult Canadian population with a sampling error in the order of plus or minus 2.5 percent to 3 percent. Such small levels of sampling error are needed because the polls often address matters of national importance. The decisions made, based in part on the results of these national polls, may be far-reaching, long-lasting, and affect millions of people.

The surveys you will be conducting to obtain customer feedback will be of a very different nature. The target group will be smaller: it will probably be the people who have come to you and your colleagues in one specific program area, within a limited time (e.g., during one year) to request certain products or services. You are, therefore, looking at a target group of maybe as many as 500 to 100,000 people (few programs directly serve more customers than that) and in some cases 50 people or fewer. The scope of decisions to be made in most cases will be, for example:

- What you have learned from the survey
- Whether to change a process to reflect customer comments
- Whether to revise some of your written products
- Whether to provide customer service and feedback training to staff .

Even in the worst case—you make the wrong decision about whether your products have to be revised and whether staff need further training—you will (if you continue to obtain feedback from our customers over time) discover your error soon enough and be able to correct it, without incurring excessive or irreparable damage in the meantime.

Based on these considerations, it is reasonable to have higher sampling errors than those associated with national surveys. You can feel comfortable with sampling errors of 5 percent or even 10 percent.

Additionally, for getting feedback from customers, you have relatively small target groups who were served by a specific program during the time period of immediate interest. For this reason, you can use a much smaller sample size than is used in the Angus Reid polls, which seek to accurately capture the opinions of millions of people.

For most surveys, maximum and minimum practical sample sizes apply. A sample of 30 or fewer respondents is too small to lend itself to rigorous statistical analysis. Nevertheless, such a sample may provide very useful anecdotal information. For large populations, researchers usually consider a sample size of about 100 respondents as the minimum.

The maximum practical and cost effective sample size for very large populations of customers is usually considered to be around 1000. A good rule of thumb for determining maximum sample size for large populations is 10 percent. Therefore, for a population of 1,000, a sample size of 100 would usually be considered appropriate. For a population of 5,000, a sample size of between 100 to 500 (i.e. 10 percent) would usually be considered as very acceptable. For populations of 10,000 or larger, a sample size of between 200 to 1000 respondents would be appropriate. Contrary to public perception, the size of the population has little or nothing to do with the size of the sample required, which is why polling companies seeking information on, for example, the opinion of the Canadian adult population on a certain matter, do not have to select samples of hundreds of thousands or millions of respondents.

Sampling Error

“Sampling error” is normally presented as a percentage with a plus or minus sign in front of it. For example, the sampling error in one particular situation may be ± 3.5 percent. That means that the true value of a given measure for the entire population—that is, the whole target group you are getting feedback from—is the value obtained from your sample of customers, plus or minus 3.5 percent. If, for example, 62.4 percent of your sampled customers are satisfied, the actual percentage of satisfied customers lies within the range between 58.9 percent (62.4 percent - 3.5 percent) and 65.9 percent (62.4 percent + 3.5 percent).

But that is not quite true. In fact, there is no range of reasonable size for which you can be certain that the true value for the full list of customers lies in that range. There is always the possibility of very unlikely circumstances—with the result that the characteristics of the customers in the sample are very different from the characteristics of the customers not in the sample. In such circumstances, the true value for all customers will be very different from the value obtained from the customers in the sample surveyed. The only way to get around this statistical fact is to specify how certain you want to be that the true value does, in fact, fall within a specific range around the value you obtain from the sample. This degree of certainty is known as the “confidence level.”

Confidence Level

The confidence level indicates how confident you want to be that the true value lies within a specific range.

There is no one confidence level that is the right one to use. There are many different possible confidence levels, and only you can decide which confidence level is appropriate for your survey.

Much of the work in the area of public opinion surveys uses the 95 percent confidence level. This means that if you determine the sampling error using the 95 percent confidence level, you can be 95 percent certain

that the true value for all your customers (i.e. the total population) will lie within a specific percentage band (equal to the size of the sampling error) around the result you obtain from the sample of customers you contact.

Another confidence level commonly used is the 90 percent confidence level. With a 90 percent confidence interval, you can be confident that 9 times out of 10, the true value falls within the value obtained from your sample of customers, plus or minus the sampling error. Some analysts use 80 percent confidence intervals.

To decide what confidence level to use, you might want to think of a scale running from 80 to 95, where 95 represents a high level of confidence and 80 represents a lower level of confidence.

Decide which confidence level to use based on the way your results will be used, how products and services may be affected by the results, and the frequency with which you will collect additional information to confirm or revise your findings

Determining the Sample Size

Now that you have established appropriate expectations with regard to sampling error and sample size, the following offers some guidance on selecting your sample size. There are several factors to consider in determining the sample size. The information provided here is intended to help get you started. Refer to the additional information provided in *Factsheets IV, V and VIII*. You may also wish to consult a statistician within your organization.

NUMBER IN TARGET GROUP*	SAMPLING ERROR	CONFIDENCE LEVEL	SAMPLE SIZE
1000	±5	80	141
1000	±5	90	214
1000	±5	95	278
500	±5	80	124
500	±5	90	176
500	±5	95	218
200	±5	80	90
200	±5	90	116
200	±5	95	132
100	±5	80	62
100	±5	90	74
100	±5	95	80
50	±5	80	39
50	±5	90	43
50	±5	95	45
1000	±10	80	39
1000	±10	90	64
1000	±10	95	88
500	±10	80	38
500	±10	90	60
500	±10	95	81
200	±10	80	34
200	±10	90	51
200	±10	95	66
100	±10	80	29
100	±10	90	41
100	±10	95	50
50	±10	80	23
50	±10	90	29
50	±10	95	34

*Total customer population

The above table is appropriate for simple random sampling (SRS), which is a sampling procedure based on sampling without replacement. Simple random sampling is the most commonly used sampling procedure. The table is based on the approximate formula given in **Factsheet IV**. This approximate formula includes an adjustment comparable to the finite population correction factor for each combination of target population and sample size.

The precise formula that can be used instead of this approximate formula is also given in **Factsheet IV**. For a discussion of the finite population correction factor, see **Factsheet IV**. For a discussion of the meaning and significance of sampling without replacement (as contrasted with sampling with replacement), see the last section of **Factsheet VIII**.

The procedure described below for randomly selecting a sample from the full list of customers served in a specific period of time is simple random sampling and is therefore consistent with the above table.

How to Use the Above Table

The instructions that follow assume that the unit of analysis for the survey will be the “person served.” (See **Factsheet VI** for a discussion of “Unit of Analysis.”)

- 1) Identify the number of persons you have served in the time period of interest. Find that number in the column labeled “Number in Target Group.”
- 2) Select the confidence level you consider to be the most appropriate given the magnitude of the decisions that will be made based (in part) on the results obtained from the survey:
 - If the decisions to be made using the survey results will be far-reaching, long-lasting and/or costly, use the 95 percent confidence level
 - If the decisions to be made are less far-reaching, less long-lasting or less costly, use the 90 percent confidence level
 - If the decisions to be made have more limited consequences, mostly in the short-term (e.g. in the next six to 12 months) and the cost implications of the decisions will be moderate, you may use the 80 percent confidence level.
- 3) Select the level of sampling error you consider to be acceptable given the magnitude of the decisions that will be made using the results obtained from the sample.
 - For many customer satisfaction surveys, a sampling error of ± 10 percent should be acceptable.
- 4) Read off the corresponding sample size.
 - In cases where the decision to be made based (in part) on the survey results is of such a nature that a smaller level of sampling error is needed, a sampling error of ± 5 percent or smaller can be used instead
 - If the total number of customers served falls between two of the values shown above in the column “Number in Target Group,” you can use interpolation to obtain an initial estimate of the appropriate sample size.
 - You can then use the approximate formula for determining sample size presented in Factsheet IV to obtain a much better estimate of the sample size needed.
 - You can stop here and make use of the approximate value for the sample size obtained in step 4) b) immediately above. Alternatively, you can, if you wish, make use of the trial and error approach presented in Factsheet IV or, even better, the combined approach, also presented in Factsheet IV, to calculate the precise value for the sample size needed.

How to Randomly Select a Sample of Customers once you have Determined what Sample Size

Once you have determined the appropriate sample size, the next step is to randomly select that number of customers from the total number served in the time period of interest. Below is a procedure you can use to make that random selection:

- 1) Make a complete list of all the persons served in the period of interest for which you already have (or can obtain, with a reasonable expenditure of effort) the needed contact information (i.e., name, plus address or phone number). Put the customers in alphabetical order to ensure that there are no duplicate names
- 2) Once all duplicate names have been eliminated, number each name starting at the top of the list. The result is the master list of customers served. The number next to each name is that person's customer number.
- 3) Here is a computer based approach for selecting a sample of customers from the master list:
 - a) Use spreadsheet software (like Lotus 1-2-3 or Microsoft Excel) to carry out the remaining steps of this procedure. Before you begin to make use of any particular spreadsheet software, make sure that it has a "randomize" function. Not all spreadsheets do.
 - b) Enter the customer numbers in numerical order into the spreadsheet, one number per row.
 - c) Place each of these numbers in the second column of the spreadsheet, leaving the first column in each row blank. The result will be a spreadsheet with the number of rows equal to the number of customers and with the rows having the numbers 1, 2, 3, and so on (up to the total number of customers served). These numbers will appear in the second column of each row.
 - d) Use the randomize function on the second column of the spreadsheet. The numbers in the second column are now in random order.
 - e) Enter numbers into the first column of each row. Enter the number 1 into this column in the first row, enter 2 into this column in the second row, and so on. These new numbers are the row labels.
 - f) Mark off the number of rows corresponding to the sample size chosen above. For example, if the sample size is 65, mark off the first 65 rows.
 - g) The numbers appearing in the second column of the rows marked off in f) above are the customer numbers corresponding to the customers to be included in the sample. For each of these customer numbers, read off the name of the customer appearing next to this number on the master list prepared in step 2) above and place it in a new list. This is the new list of customers selected for inclusion in the sample—the people you will contact during the survey and ask to respond to the survey questions.
 - h) If, due to a lower than expected response rate, the number of customers from whom responses are received is fewer than the desired sample size, and all reasonable follow up efforts have already been made to increase the response rate, go back to the spreadsheet and mark off the additional number of rows needed to reach the desired sample size. The numbers appearing in the second column of these additional rows are the customer numbers for the customers to be added to the sample.

Sampling - More on Sample Size

FACTSHEET IV

The Effect of the Response Rate on Sample Size

The initial sample size is the number of customers you attempt to contact and obtain a response from during the survey. The final sample size is the actual number of customers for which responses were received during the survey. The response rate is the percentage of customers included in the initial sample for which a usable response was received. The response rate will vary depending on the kinds of customers being contacted, the kind of product or service received, the kinds of questions asked in the survey, and so on.

Since the response rate is almost always less than 100 percent, the total number of customers from whom responses are received will almost always be less than the number of customers initially selected to be part of the sample. The table in **Factsheet III** shows the approximate sampling error associated with the final sample size. Since a certain final sample size is needed (which considers only the customers from whom responses were received), the number of customers included in the initial sample (the initial sample size) must always be greater than the desired final sample size.

For periodic surveys that repeat, in whole or in part, questions asked in the previous version of the survey (in order to determine the extent to which customer satisfaction has changed in the intervening period due to changes in service provision), the response rate for the next version can be estimated by using the response rate actually observed in the previous version. Where a particular survey is being conducted for the first time, it would be reasonable to assume a response rate of, say, 85 percent when determining how many customers to select for the initial sample. If the estimated response rate turns out to be too high, more customers can be added to the sample later, using the procedure described in step 3 g) of the procedures presented in **Factsheet III** for selecting the sample of customers.

Note, however, that it is better to achieve the desired final sample size by having a higher response rate and a smaller total number of customers selected to be in the sample than through a lower response rate and a higher number of customers selected to be in the sample. The reason for this is non-response bias. Non-response bias is encountered if the customers who did not respond to the survey are significantly different from those who did respond. Non-response may be due to the inability of those conducting the survey to reach a specific customer in the sample, (e.g., because his or her telephone number has changed), or may be due to the unwillingness of that customer to participate in the survey at all, or to answer one or more questions in the survey. Because some customers contacted will answer some questions but not others, the degree of non-response will vary from question to question on the survey questionnaire.

Non-response bias is one source of the overall bias in the survey results stemming from the fact that those surveyed are not representative of the target group you are seeking to characterize. Another source of such bias is use of a poorly chosen or poorly constructed master list from which you randomly select the sample of people to be surveyed.

For this reason, non-response should always be kept to the lowest level achievable. This is accomplished through active follow up with those customers in the sample from whom you were not able to get a response. Only after all reasonable follow up efforts have been made should a shortfall in the number of customers responding (compared with the desired final sample size) be made up by selecting additional customers to be part of the sample.

An Adjustment Factor

The values for the sampling error shown in the table in **Factsheet III** are approximate. One reason they are approximate is that they do not take into account a factor that, if considered, would result in lower values. Below is an adjustment factor you may use to account for this additional factor and, in so doing, obtain a more precise value for the sampling error

An adjustment factor to reflect that the sample result was greater than or less than 50 percent.

One significant complication associated with the calculation of sampling error is that the sampling error varies markedly with the magnitude of the sampling result obtained. Sampling result means, for example, the percentage of customers in the sample who say they are satisfied with the product or service they received. All else being equal, the largest sampling error is associated with a degree of satisfaction of exactly 50 percent. Any higher or lower level of satisfaction will result in a lower level of sampling error. The lowest level of sampling error is associated with a level of satisfaction of 100 percent or 0 percent.

Here are the specific values of this adjustment factor that should be used for various specific values of the sample result:

THE SAMPLE RESULT (I.E., THE PERCENTAGE OF CUSTOMERS IN THE SAMPLE WHO SAID THEY WERE SATISFIED WITH THE PRODUCT OR SERVICE RECEIVED)	ADJUSTMENT FACTOR
99 percent	0.20
98 percent	0.28
95 percent	0.44
90 percent	0.60
80 percent	0.80
70 percent	0.92
60 percent	0.98
50 percent	1.00 (i.e., no adjustment)
40 percent	0.98
30 percent	0.92
20 percent	0.80
10 percent	0.60
5 percent	0.44
2 percent	0.28
1 percent	0.20

Thus, if the sample result shows that 90 percent of the customers in the sample were satisfied with the product or service they received, then the associated sampling error is obtained by multiplying 0.60 times the sampling error shown in the standard tables (including the table in **Factsheet III**). So if the sampling error shown in the table is ± 10 percent for the sample size used, then the actual sampling error is really only ± 6 percent ($= \pm 10$ percent $\times 0.60$).

If the sample result shows that 80 percent of the customers were satisfied, and the sampling error obtained from the table was ± 10 percent, the actual sampling error would be ± 8 percent ($= \pm 10$ percent $\times 0.80$). These are rather significant adjustments.

If the levels of satisfaction for most of your organization's products and services are likely to be in the range of 80 to 90 percent or more, it is highly advisable to take this adjustment factor into consideration: 1) when estimating the sampling error that will result from use of a specific sample size, and 2) when determining the actual sampling error associated with a given sample result after the sampling process has been completed and the results have been obtained.

There is a major implication in the fact that the sampling error varies with the sample result. Since the sample result varies from question to question asked in the survey, there is no one level of sampling error associated with the survey as a whole. Instead, there will be a different level of sampling error for each result obtained (i.e., a different sampling error for the response to each question). If the degree of satisfaction obtained from the customers sampled is close to 50 percent on one question and close to 100 percent on another, the sampling error for the second will be much lower than (possibly much less than half) the sampling error for the first. The plus or minus figure should therefore be different for each result reported (i.e., it should be different for each question for which the response is shown).

It is common practice, however, for only one level of sampling error to be shown. This may be either 1) the largest sampling error associated with any of the results reported, or 2) the sampling error that would be obtained in the worst possible case, i.e., if the result had been a level of satisfaction of 50 percent.

In presenting the results from customer satisfaction surveys, you may either conform to this common practice or show question-specific sampling errors. The latter can be accomplished by simply presenting a plus or minus figure after each sample result shown.

For example:

THE QUESTION ON THE SURVEY FOR WHICH THE RESULT IS BEING REPORTED	THE DEGREE OF SATISFACTION REPORTED
Question 1	83 percent \pm 8 percent
Question 2	91 percent \pm 6 percent
Question 3	78 percent \pm 9 percent
Question 4	87 percent \pm 8 percent
Question 5	94 percent \pm 5 percent

Precise Formula for Calculating the Sampling Error

Here is an alternative approach for 1) estimating the sampling error that will occur in a planned sampling survey or 2) calculating the actual sampling error associated with a specific result in a survey that has already been completed. Instead of obtaining values of the sampling error from a table (like that included in **Factsheet III**) and applying the adjustment factor presented above (and if necessary also applying the second adjustment factor presented in the next section below), simply calculate the sampling error directly from the precise formula.

The precise formula presented above is based on the simple random sampling (SRS) procedure, in which the sample is drawn using the sampling without replacement procedure. Simple random sampling is the most commonly used sampling procedure and is the procedure recommended in this manual for use in customer satisfaction surveys. It is the procedure reflected in the table in **Factsheet III** and in all but the last section of **Factsheet VIII**. For further discussion of this topic, see the last section of **Factsheet VIII**.

The formula below will give the exact size of the sampling error for any combination of number of customers served, sample size, sample result and confidence level. Using this formula automatically takes into account and reflects the differences in the magnitude of the sampling error due to differences in the sample result and automatically includes the finite population correction factor, which is discussed in the next section of this Factsheet

The sampling error = (Z) times the square root of $\frac{p \times q}{n} \times \frac{N - n}{N - 1}$

where p = the sample result (i.e., the percentage of customers who were satisfied with the product or service they received)

q = 1 - p

n = the sample size

N = the total number of customers served

Z = is a constant coefficient (i.e., multiplier) associated with the confidence level that is being used. (This must be looked up in a table in a statistics book). Each of these constants is known as *the Z-score* for that confidence level.

Here are the coefficients (i.e., Z-scores) for the three confidence levels that have been suggested for use in these Guidelines:

For the 95 percent confidence level, Z = 1.960

For the 90 percent confidence level, Z = 1.645

For the 80 percent confidence level, Z = 1.282

The Adjustment Factor

The table presented in **Factsheet III** reflects both the sample size (n) and the total number of customers served (N) in determining the sampling error for any given confidence level selected. You may come across reference books on statistics or sampling procedures that present tables in which the sampling errors are shown for various different sample sizes but in which no consideration is given to the total number of customers served. In such cases, to get the actual sampling error, it is necessary to multiply the sampling error in such tables by an additional factor known as the finite population correction factor.

The Finite Population Adjustment Factor

The standard sample survey techniques were developed for use in situations where there is a very large number of people in the pool of those from whom the sample is to be drawn. This is true, for example, of surveys of national public opinion. The standard formulas and tables are therefore predicated on sampling from a very large pool, one that is, in practical terms, as good as infinite and is treated by statisticians as though it were infinite.

When the number of people in the target group from which the sample is to be drawn is much smaller, an adjustment factor (one known as the finite population adjustment factor) should be used to correct for this circumstance. The finite population adjustment factor can always be used (its use never gives an incorrect result), but it is generally not needed if the sample size chosen is less than about one-tenth (10 percent) the size of the target group.

If the sample size is greater than 10 percent of the total number of customers served, then the finite population adjustment factor should be used in calculating the size of the sampling error.

These circumstances will apply in a large percentage of customer satisfaction surveys conducted by public-sector organizations. Luckily, use of the finite population adjustment factor always results in a lower sampling error than would have been obtained without its use. Therefore, if you are satisfied with the magnitude of the sampling error calculated for a specific survey without using the finite population adjustment factor, there is no need to use it for that survey, unless you want to know exactly how much lower the true sampling error is.

The finite population adjustment factor (FPCF) can be calculated using the following formula:

FPCF = the square root of $\frac{(N-n)}{(N-1)}$

where: N = the total number of customers served

n = the number of customers in the sample (i.e., the sample size)

The adjusted sampling error is obtained by multiplying the finite population adjustment factor and the sampling error obtained from a standard table that considered only sample size and confidence level (and did not consider the size of the target group i.e., the population from which the sample is to be drawn). Because of the way the finite population adjustment factor is calculated, the adjustment factor varies with the sample size as a fraction of the size of the target population from which the sample is to be drawn. See the following table:

SAMPLING SIZE AS A FRACTION (PERCENTAGE) OF THE SIZE OF THE TARGET POPULATION = n/N	APPROXIMATE VALUE OF THE FINITE POPULATION ADJUSTMENT FACTOR
10 percent	0.95
20 percent	0.89
40 percent	0.77
50 percent	0.71
60 percent	0.63
70 percent	0.55
75 percent	0.50

As can be seen from the above table, if the sample size is approximately 10 percent of the size of the target group (i.e., the total number of customers served, from which the sample is to be drawn), then the adjustment factor is approximately 0.95. Thus, when using a sample size that is 10 percent of the total number of customers, the sampling error will be reduced to 95 percent of what it otherwise would have been (e.g., the sampling error would be reduced from ± 10 percent to ± 9.5 percent).

If the sample size is 20 percent of the size of the target group, then the adjustment factor is approximately 0.89. Thus, when using a sample size that is 20 percent of the total number of customers served, the sampling error will be reduced to 89 percent of what it otherwise would have been (e.g., the sampling error would be reduced from ± 10 percent to ± 8.9 percent).

If the sample size is 50 percent of the size of the target group, then the adjustment factor will be approximately 0.71. Thus, when using a sample size that is 50 percent of the total number of customers served, the sampling error will be reduced to 71 percent of what it otherwise would have been (e.g., the sampling error would be reduced from ± 10 percent to ± 7.1 percent).

There is a general rule of thumb used by many statisticians: the finite population adjustment factor should be applied whenever the sample size is 10 percent or more of the size of the target group from which the sample is to be drawn.

Note, however, that use of the finite population adjustment factor always gives a more accurate value for the sampling error than by not using it. You should therefore never be reluctant to use it. It is just that there are certain circumstances (i.e., when the sample size obtained from a standard table is less than 10 percent of the size of the target population) when it is possible to disregard it without adversely affecting the estimated size of the sampling error.

Note also that the last element in the precise formula for calculating sampling error in the previous section of this Factsheet is the finite population adjustment factor. Use of that precise formula therefore will ensure that the finite population adjustment factor is automatically taken into account when determining the size of the sampling error.

A trial-and-error procedure and an approximate formula for determining sample size

A Trial-And-Error Procedure

The precise formula above can be used directly to determine the level of sampling error for any combination of confidence level, number of customers served, and sample size. That same formula can also be used to determine sample size when the desired confidence level, the desired maximum level of sampling error and the number of customers served, are known. It just cannot be solved directly to obtain sample size in such situations. This is so because sample size (n) appears in two

different places in the equation, and the form of the equation is such that it is not possible to rearrange it to solve directly for sample size. Instead, you must use the precise formula as shown to determine the needed sample size. You can do so as follows:

- 1) Begin by estimating the needed value of the sample size.
- 2) Use that value of the sample size (i.e., your initial estimate) to solve the precise formula equation for sampling error.
- 3)
 - a) If the value of sampling error you obtain from the formula is less than the maximum level of sampling error you are willing to accept, then you should decrease your estimate as to the corresponding value of the sample size and solve the equation again.
 - b) If the value of sampling error you obtain from the formula is greater than the maximum level of sampling error you are willing to accept, then you should increase your estimate as to corresponding value of the sample size and solve the equation again.
- 4) Continue steps 3) a) and b) above until you arrive at the appropriate sample size. That will be the largest value of the sample size that, when plugged into the precise formula along with the number of customers served and the Z-score corresponding to the confidence level you have selected, gives you the highest possible value of sampling error, i.e., one that equals (or is slightly less than) the level of sampling error you have set as the maximum you are willing to accept.

The Approximate Formula for Determining Sample Size

The trial-and-error approach described above will always give you the best possible value for sample size. However, the process for arriving at that value can be rather tedious. For this reason, an approximate formula has been developed that will give you a reasonable value for the sampling error that is close to the one you would

get from the trial-and-error procedure. This approximate formula needs only to be solved once—no repeated calculations are needed. The resulting value will, however, in most cases, be a larger sample size than what you would get from the trial-and-error procedure. That is, the approximate formula will give you a larger sample size than that actually needed to achieve your target level of sampling error. Here is the approximate formula:

$$n = \frac{N \times Z^2}{[4 \times (N - 1) \times E^2] + [Z^2]}$$

Where

n = sample size

N = number of customers served (from which the sample is to be drawn)

E = the maximum acceptable level of sampling error, expressed as a decimal fraction (e.g., 5 percent = 0.05)

Z = the Z-score corresponding to the confidence level selected (this can be obtained from most standard statistics references, including most basic statistics textbooks). The Z-scores for the 80 percent, 90 percent and 95 percent confidence levels are given above in this Factsheet in conjunction with the *precise formula*.

A Combined Approach

You can, if you wish, make use of both the approximate formula and the trial-and-error approach. Begin by using the approximate formula to get an approximate value for the sample size. Then use this approximate value as your first estimate of sample size in the trial-and-error approach, and proceed from there with the trial-and-error approach as described above.

This combined approach will allow you to come up with the lowest possible sample size with the least amount of effort.

Why is So Much Attention Given to Sample Size?

Much of **Factsheet III** and all of this Factsheet have been devoted to considerations related to sample size. You should spend some time determining an appropriate sample size because if a larger sample size is used than is really needed, you will have incurred a greater cost in conducting the survey and you will have imposed a greater response burden on your customers than necessary.

- The extra, unneeded costs alone can be quite considerable. For each extra customer in the sample, additional time has to be spent conducting the telephone interview (assuming for clarity that a telephone survey was conducted), following up with those who did not answer when originally called, following up with those who did not initially agree to participate, and so on. It also means more data to be recorded and analyzed.
- The extra burden on your customers (in terms of time spent responding) can also be quite large when the total time spent by all customers surveyed is considered.
- If the sample size turns out to be greater than was needed, the extra cost incurred and the extra burden imposed were wasted.

On the other hand, if you use too small a sample size, you may end up with so much uncertainty about the true degree of satisfaction of your customers (because the sampling error was so large) that you do not learn much from the survey. You were uncertain about their degree of satisfaction before (that is why you decided to conduct the survey) and you may now find that your level of uncertainty afterward is not much reduced. In this case, the whole cost of conducting the survey may prove to have been wasted.

Keep in mind that any wasted time and dollars associated with conducting surveys using sample sizes that were too large or too small could otherwise have been used to improve the products or services you provide to your customers. So the effort you spend ensuring that you use the most appropriate sample size will help maximize the time and dollars you have left for improving customer service in the ways your survey has shown to be needed.

In conclusion, sample size is very important—you want it to be large enough to give meaningful and useful results, but not so large that you incur extra expense or unduly burden your customers with the time needed to respond. When you conduct a customer satisfaction survey, you should use the smallest sample size that will give you results of sufficient precision to be meaningful and useful to you. And greater precision—which is another way of saying a lower level of uncertainty—comes from a smaller level of sampling error. The smaller the sampling error the greater the precision.

How to Obtain Approvals for Customer Service Surveys

FACTSHEET V

While the approval process will vary from jurisdiction to jurisdiction, here are some general areas to consider when preparing to seek approval.

Outline for Approval

Research Objectives

- What information the organization wants to collect
- Why it is important
- How information will be used
What kinds of decisions will be made as a result of research
- What benefits will be achieved by having this information
- Who will benefit

Strategic Relevance

- How the research ties in to the priorities of the larger organization
- Whether the program area which will use the findings have been involved in the design of the research

Target Audience:

- Who is the target audience, client group or stakeholders that the research is surveying or interviewing?

Methodology

- Research design, e.g. questionnaire, telephone, mail, face-to-face, focus groups, executive interviews
- Sample size, e.g. demographics and why that particular size is appropriate
- Information requirements including the measure (awareness, usage, attitude) or the data that the study will collect;
- Description of sample, e.g. the general public, specific target groups such as farmers, business reps

Time Lines

- Projected start and completion dates

Cost

- Estimate or actual cost

Firm

- Whether the work is being done in-house or with a third party consultant
- Which firm will be used and why they were chosen
- Whether tendered

Related Research

- Whether similar research has previously been conducted
- Whether data is part of a larger project
- Other information relevant to the study

Consultations

- Consultations that have taken place
- If none, explain why not

Alternatives

- Whether alternatives were considered for obtaining required information;
- If no alternatives have been considered, why not.

Distribution and Release Plans

- How the organization plans to release information

Contact Name

- When appropriate, name and telephone number of contact person

Unit of Analysis

FACTSHEET VI

This Factsheet compares three alternative units of analysis that might be used for customer feedback activities and recommends that one of them, the person served, be used as the unit of analysis in most surveys of customer satisfaction conducted by public-sector organizations. It also recommends that another unit of analysis, the individual customer transaction, be used for most activities that rely on continuous feedback to track the level of customer satisfaction and how it is changing over time.

The unit of analysis selected for the collection of customer feedback information is important for a number of reasons: it affects the size of the list from which the sample has to be drawn and therefore affects the decision as to sample size; what kinds of things will be included on that list; what is asked of each person contacted; and how the responses of those in the sample (i.e., those contacted) are analyzed.

Three principal alternative units of analysis may be used for any given customer feedback activity:

- 1) The unit of analysis is the customer transaction. (This is explained in the discussion that follows below.)
- 2) The unit of analysis is the person served.
- 3) The unit of analysis is the organization served where the person served was acting on behalf of an organization.

To clarify the differences among these three possible units of analysis, the implications of choosing one of these units of analysis are compared with each of the others.

To facilitate this comparison, assume that the customer feedback method that has been selected for use is a telephone survey. Once the unit of analysis to be used is selected, the next steps are to determine what sample size to use, and to select randomly that number of specific people (or organizations) to be called.

Keep in mind that any customer feedback activity should seek feedback from customers on their satisfaction with products and services received in a certain specific period of time. *For clarity, assume that the period of time of interest is a specific calendar year.*

In examining all the customers served in a specific (hypothetical) program area for the year of interest, you discover that a total of 236 different people were served (by being provided a product or service). On closer examination you discover that there were a total of 377 customer transactions. The reason for the difference in these two numbers is that some customers, after obtaining one product or service, called back later in the year to request another product or service. A few called back a third time, and so on. Each occasion on which a specific person called to obtain a single specific product or service is a customer transaction.

Comparison of Person Served Versus Customer Transaction as the Unit of Analysis

If the unit of analysis is the person served, then use 236 as the total number of people/things to be characterized and this will be the basis for choosing the sample size. If the unit of analysis is the customer transaction, use 377 as the total number of people/things to be characterized and this will be the basis for choosing the sample size.

If you decide to use the person served (of which there are 236) as the unit of analysis, and you choose to use a sample size of 40, then you have to make a random selection of 40 persons served.

So at this point you will put together a list of all 236 persons served. Note that each person served will appear on this list only once, no matter how many times he/she called during the year to obtain a product or service. As a consequence, when 40 names are randomly picked from this list, each person served has the same chance of being picked as every other person served, no matter how many times he/she called during the year to obtain a product or service. Finally, when the persons randomly selected are called, they will be asked about all of their experiences during that year as customers of the organization.

If instead you decide to use the customer transaction (of which there are 377) as the unit of analysis, then all else being equal, you will need a larger sample size because you now have more things (transactions) to sample from. Say now, as a consequence, you choose to use a sample size of 70. To randomly select 70 of these 377 customer transactions, you will have to make a different, longer list of things to pick from. This time the list will contain 377 items, and each item in the list will be a customer's name plus the one product or service obtained in a single transaction. (Each item in the list may also include the date on which that product or service was obtained—this will be desirable in those program areas where you find some individuals obtained the same product or service more than once during a single year.)

Customers who obtained more than one product or service during the year will appear on the list more than once, and customers appearing on the list twice (because they obtained two products or services during the year) will have twice as great a chance of being randomly selected to be part of the sample as those customers who only obtained one product or service during the year. Furthermore, what will be picked is not just the name of a customer but the name of the customer plus the specific product or service he/she obtained in a specific transaction during the year (plus, if needed, the date it was obtained). Finally, when those picked are called, the questions they are asked will focus specifically on that one transaction, i.e., they will be asked to limit their response/comments to how satisfied they were with that one particular product or service (obtained on that date), how courteously they were treated when obtaining that one product or service (on that date), etc.

Because of the greater complexity associated with its use, it is expected that most public-sector organizations will not use the customer transaction as the unit of analysis for their customer feedback surveys. At the same time, when there is reason to believe that the degree of customer satisfaction varies greatly from one product or service to another provided by the same organization, it may be decided that it is appropriate in that case to use the customer transaction as the unit of analysis. If so, when contacting customers included in the sample, it is important to ask them to limit their comments to that one particular product or service obtained in the transaction for which they was selected even if they obtained two or more products or services during the year.

Note that useful product and service-specific customer satisfaction data can also be obtained by using the person served as the unit of analysis. This can be accomplished as follows: use the total number of persons served as the basis for choosing the sample size. Next, use the list of persons served as the basis for random selection of the specific persons to be contacted. Then, when calling each person selected, first ask him/her to identify all of the various products or services he/she received during the year; second, ask about overall satisfaction with those products and services; and finally, ask about degree of satisfaction with each individual product and/or service received. The analysis of the results can then be used to characterize the overall degree of satisfaction of the 236 customers as a whole, and will also provide useful information about differences in degree of satisfaction with specific products and services.

Comparison of Person Served Versus Organization Served as the Unit of Analysis

For this same example (236 persons served in 377 customer transactions), there is yet another possible unit of analysis: the organization served (rather than the person served) for customers that were acting on behalf of an organization. In this (hypothetical) case, of 236 persons served, 96 were acting on their own behalf, and 140 were acting on behalf of an organization.

Furthermore, there were several cases where more than one person served was acting on behalf of the same organization. For example; seven different persons called to obtain products or services on behalf of the XYZ corporation, five different persons called to request products or services for the ABC law firm, and three different people called requesting products or services for the LMN environmental group. You find, on further examination, that the 140 persons served who were acting on behalf of an organization were acting on behalf of a total of 63 different organizations.

With these facts in mind, you may decide that you want to know how satisfied each of these organizations as a whole was with the products and services it obtained. In this case, depending on how it is decided to approach those not acting on behalf of an organization (i.e., persons acting as members of the general public), you could end up with a total of 159 total customers (persons and organizations)—the total of the number of organizations served (63) plus the total number of persons from the general public served (96).

Or you could treat the 96 members of the general public as one group and the 63 organizations served as a second group, and sample separately from each of these two groups. In that case, you would again have a total of 159 people or things to sample from (63 organizations in one group plus the 96 members of the general public treated as one group), but you would approach the sample selection process differently.

Say that the program area seeking customer feedback decides to use the second approach: you then have a total of 159 people and things to sample from, separated into two different groups. You will have to sample separately from the group consisting of the 63 organizations served and from the group consisting of the 96 members of the general public who were served.

This sample selection process can be conducted with the group consisting of the 96 members of the general public. You want to select a sample of these 96 persons to contact in your survey. In this case, all else being equal, with only 96 persons to sample from, you can use a smaller sample size than you used earlier

when the unit of analysis was people served (of which there were 236) or customer transactions (of which there were 377). Say it is decided to select a sample of 25 from this group. The most straightforward method for selecting these 25 would be to create a list of the 96 members of the general public and then randomly select 25 names from that list. You then contact each of these 25 people in your phone survey.

Now address the group consisting of the 63 organizations. You want to select from these 63 a sample to be contacted in your phone survey. Again, all else being equal, with only 63 things to sample from, you can once again use a smaller sample size than you used earlier when the unit of analysis was people served or customer transactions.

Furthermore, you can also use a smaller sample size than you used for the group consisting of the 96 members of the general public. Say it is decided to use a sample size of 20. You now have to select 20 organizations to contact in your survey. Once again, the most straightforward method for selecting these 20 would be to create a list of the 63 organizations served and then randomly select 20 organizations from that list.

But you now have another problem. You have to decide who to call at each of these organizations. For those organizations where only one person called during the year to obtain a product or service on behalf of that organization, there is no problem—that is the person who will be called. But for organizations included in the sample for which more than one person obtained a product or service on behalf of that organization, a decision has to be made as to whether all of these persons will be called during the phone survey. If not all, then how will those to be called be selected and how many will be selected for each organization?

As you can see, using the organization served as the unit of analysis results in a number of complexities. Further complexities arise in analyzing the results obtained from using such an approach. For this reason, you should generally not use the organization served as the unit of analysis (unless of course you have a compelling reason to do so).

CONCLUSION

In most cases, for reasons of simplicity and convenience alone, the preferred unit of analysis for obtaining customer feedback by means of surveys will be the person served. Experience with customer surveys elsewhere has shown that using the person served as the unit of analysis gives meaningful and very useful results. Since surveys based on person served are the easiest to design and carry out, organizations undertaking customer surveys are encouraged to use persons served as the unit of analysis for all of customer feedback activities, except when there is a compelling reason to do otherwise. Furthermore, adopting the person served as the unit of analysis for most customer feedback surveys will maximize the comparability, across different program areas and over time, of the results obtained from these surveys.

Please note that the above conclusion applies only to customer satisfaction surveys (periodic surveys). Where a continuous feedback approach is to be used (like a comment card included in each copy of a publication sent out or a follow-up phone call to each nth customer two days after a product or service has been provided), the unit of analysis will normally be the specific customer transaction (the transaction in which the product or service was provided) about which the feedback is being sought.

Presenting Customer Feedback Results

FACTSHEET VII

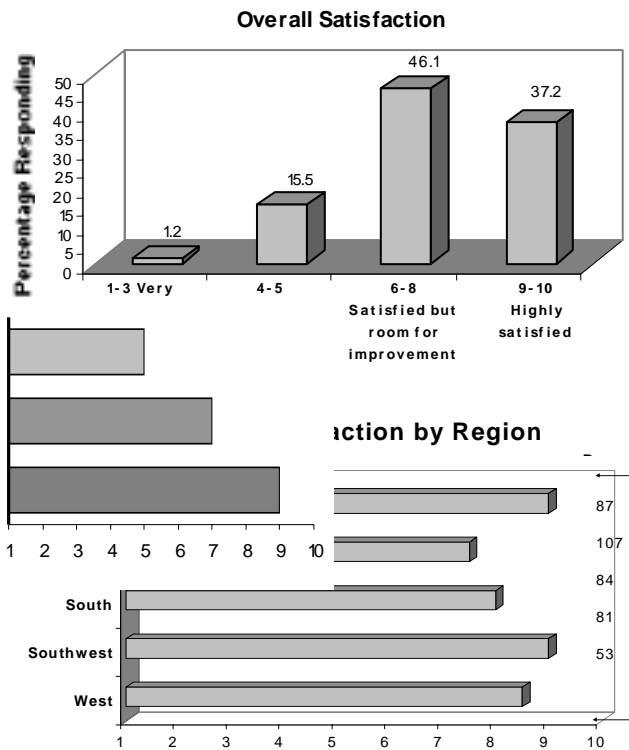
Once data have been collected, think hard about how you want to present them. Often, you may focus a lot of attention on collecting feedback and performing complex analysis and forget that you have to market the findings to help bring about change. The form you select for presentation can make or break all the previous work. Results need to be communicated clearly to the appropriate people before an organization can begin learning from its customers.

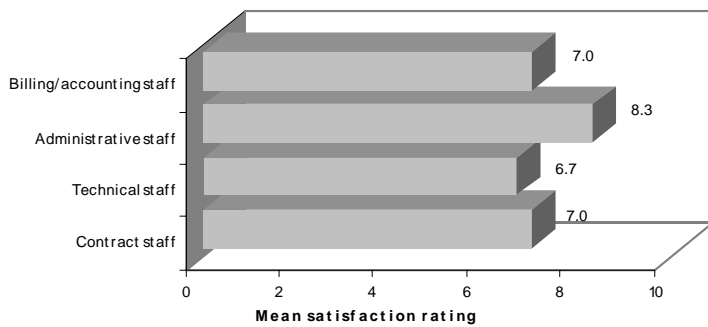
There are many variables to consider when presenting data, such as the nature and level of the audience, the reasons the feedback was collected and how it will be used, and the nature of the data itself. Some of the more common forms are listed below, with a brief explanation of the unique use of each presentation.

A very basic bar graph can be used to convey the percentage of the population that responds within a given range. For example, this graph indicates that 1.2 percent of the respondents rated their overall satisfaction as 1, 2, or 3 on a scale of 1 to 10; 15.5 percent rated overall satisfaction as 4 or 5; 46.1 percent as 6, 7, or 8; and 37.2 percent as 9 or 10. Note that these groupings of 1–3, 4–5, 6–8 and 9–10 are somewhat arbitrary, and can be changed to suit the needs of your project. Additionally, the labels very dissatisfied, dissatisfied, satisfied, but room for improvement and highly satisfied are also subject to change according to individual needs.

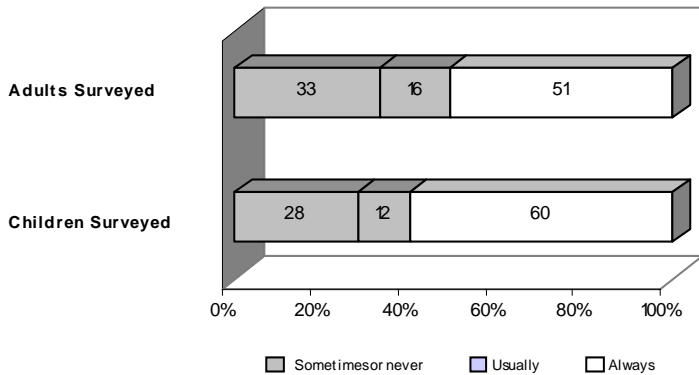
It is often useful to organize responses by customer segments that are meaningful to the survey audience. In this case, the mean, or average, overall satisfaction ratings are organized by geographic regions. Note also that the base, or number of respondents in that region, appears to the right of each bar.

Responses can also be organized by other types of segments. In this case respondents answered questions about their length of use, and the amount of grant money they had received. Note that the number of respondents in each category is to the right of each bar.





A bar graph can also be used to identify the mean, or average, response to various services received. This is useful to compare the levels of satisfaction between services offered.



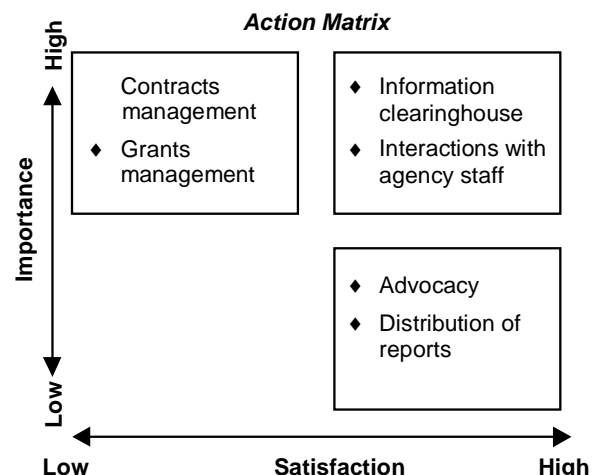
A slightly more complex graph can allow the comparison of responses between two segments of a population. In the example, 60 percent of the children surveyed considered the quality of the service they received to be 9 or 10 on a scale of 1 to 10. In general, it appears that more children rated the quality of the service as higher, while more adults provided lower ratings.

Another way to compare two populations is to use segmented bar charts, as shown above. The graph above indicated that children surveyed were more likely than adults to feel they received the service they needed when they needed it.

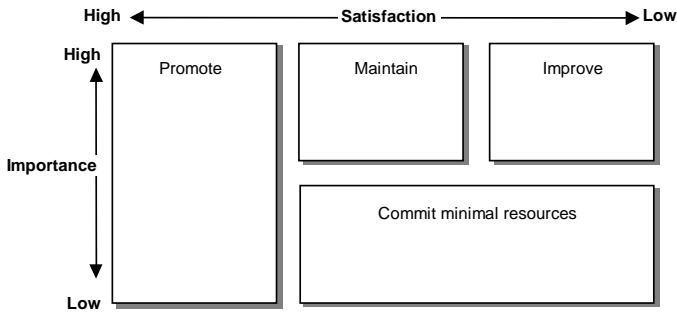
If driver analysis is being performed, a useful way to present the results is in a quadrant chart, as in the example below. By comparing the levels of satisfaction with the levels of importance, you can put the results in priority. In the example below, the services listed in the upper right quadrant were very important to the customer and were rated as providing high levels of satisfaction.

These services, information clearinghouse and interactions with staff are identified as areas where the organization is meeting or exceeding the customers needs. In contrast, the upper left quadrant identifies services that are very important to the customer, but are rated as providing low satisfaction. It is these services, contracts management and grants management, that require immediate attention. The lower right quadrant identifies services that provide high levels of satisfaction, but are not important to the customer. In this example, no services were found to be in the lower left quadrant. This quadrant identifies services that are not important to the customer and provide low levels of satisfaction.

Priority Issues for Building Customer Loyalty

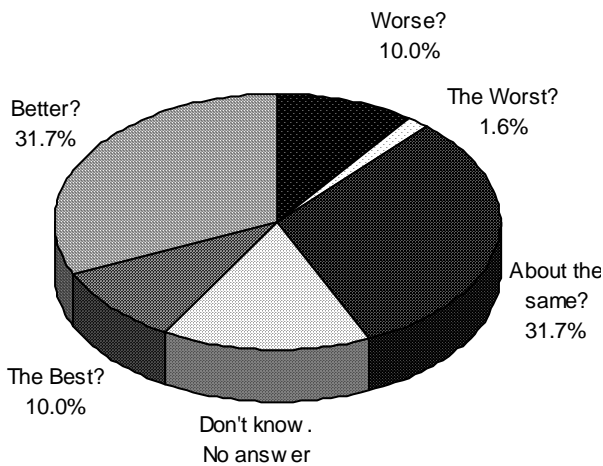


Drivers of Satisfaction



Another example of a chart that related the results of driver analysis is to the left. In this case, subjective labels have been applied to the areas of the chart, according to the needs of the project.

Compared to other Government or Government-like grant or funding processes would you say that your experience was...



A pie chart is another method useful for relating the proportions of a population that responded in a particular way to a question. In the example on to the left, the majority of the respondents clearly felt that the funding process was about the same as with others.

Examples of Customer Remarks Concerning Billing Needs

- "Billing is sketchy and difficult to understand."
- "We are running approximately 6 months behind schedule."
- "I have had problems with billing, and would like XYZ to reassess the way they are billing; timeliness and accuracy."
- "Poorly itemized billing."
- "Billing report really hard to understand, very inconsistent."
- "More prompt billing, so that I can delete them off the records."
- "Billing is a twilight zone."

What Products or services do XYZ customers want to see offered? (# of responses)

> Information distribution	34
- Internet	9
- Mailings	15
- Other	10
> Improved/clarified policies (supplies, photographic printing, microfilm, signs, library, etc.)	20
> Improved customer service	7
> Informing customers of existing services	8

One additional type of chart is the trend or run chart which is used to identify meaningful changes from year to year, or between feedback activities. Such charts are used to monitor progress and show improvement. A time series chart not only can show trends, it can portray relationships. With time series, change and relationships in two or more items can be compared that would otherwise appear on different scales (apples and oranges) if the net change from one point to another is defined as a percentage.



Appendix A

Common Measurements Tool ©

INSTRUCTIONS TO ORGANIZATIONS

At first glance, the Common Measurements Tool (CMT) looks like a “ready-to-use” client satisfaction survey, but it is not. The CMT, as it exists here, is lengthier than most organizations would want for a client satisfaction survey. Customization by the user is critical to its effectiveness in implementation. The CMT provides a comprehensive collection of potential survey items that public service organizations may select from in designing a client satisfaction survey.

Before proceeding with customization, there are a few methodological recommendations that organizations should consider. The CMT was designed to facilitate consistency and comparative analysis among similar public-sector organizations, who choose to use it. In addition, the CMT will offer organizations an easily accessible survey system to use to build benchmarks within their own organization. This is achieved by using the tool in the same way repeatedly and then comparing results.

For the aforementioned reasons, it is important to maintain the measurement scale and the wording of the items that are selected by the organization. In addition, item ordering should also be maintained. The CMT has a prescribed section where organizations can add questions unique to their organization – placement of these questions should also be maintained in the designated section to decrease the effects these questions have on the other items included in the survey. The customization process will involve the following steps:

1. Define the goals of your client satisfaction survey
2. Review the CMT in its entirety
3. Decide which items are relevant to your organization and the goals of your study
4. Identify any questions you want to ask that may not be included in the CMT
5. Design those questions and add into the designated section for additional questions
6. Customize the wording of the introduction to suit your organization
7. Customize the wording (service/product) throughout the CMT to make it relevant to your organization and the specific service transaction the survey applies to.

It is recommended that organizations conduct pre-testing of the customized tool before implementing the survey. Pre-testing will indicate where any adjustments might be necessary before implementing the survey, avoiding errors that clients will be exposed to.

For more information about the CMT, please contact the Institute for Citizen-Centred Service at www.iccs-isac.org

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Client Satisfaction Survey

This client satisfaction survey is intended to provide (organization fills in name) with information that will assist in better serving your needs. This survey provides you, the client, with the opportunity to tell us how we are doing and how we can improve. We are interested in what you have to say about our service/product and value the time you take to complete this survey. Thank you!

We are surveying clients who have used our service in the last (organization fills in time period). Participants are selected on a random basis (or organization fills in otherwise). The information collected in this survey will be used by (organization) to better understand your needs and help us make improvements to

the way we deliver our service/product. Your responses will remain anonymous as we will be summarizing all the information we receive.

This survey asks questions about many aspects of your experience with our services/product. These include how you were served, how reliable our service/product was, how easy it was to access, and others.

When you have completed this survey please (method of return specified by organization, i.e. place it in the box provided, mail it into our office with the self-addressed envelop) by (fill in date). If you have any questions about this survey and the use of this information, feel free to contact (fill in contact person) at (fill in contact number).

SECTION 1 - Service/Product Delivery

This section asks about the way this service/product was provided to you by the service staff.

For the following questions (#1 – 10), please circle the one response that best describes your experience.

1. Have you received the service/product or is the service delivery process continuing at this time?
 - a) service/product received > **go on to question #2.**
 - b) service/product delivery in process or ongoing > **go to question #6.**

2. *How long did it take to receive the service/product – from the time you first contacted the organization that provided the service/product until you first received service/product?*

Note to Organizations: *The intervals for question 2 & 3 can refer to minutes, hours, days or weeks depending on the nature of the organization using the instrument.*

0-4 5-9 10-14 15-19 20-24 25-29 30+

3. *What is an acceptable amount of time to receive this service/product?*

0-4 5-9 10-14 15-19 20-24 25-29 30+

4. *How many contacts did it take for you to receive this service/product? A “contact” is each different phone call, e-mail, posted letter, fax, or office visit.*

1 2 3 4 5 6 7 8(+)

5. *What is an acceptable number of contacts required to receive this service/product?*

1 2 3 4 5 6 7 8(+)

6. *Did you visit a service location to access the service/product?*

a) **Yes > go to question #7**

b) **No > go to question #9 on next page**

7. How long did you have to wait at the service location before having contact with the staff who provided the service/product? **Responses are in minutes.**

1-5 6-10 11-15 16-20 21-30 31-45 46-59 60(+)

8. What is an acceptable amount of time to wait at the service location before having contact with staff who provide the service/product? **Responses are in minutes.**

1-5 6-10 11-15 16-20 21-30 31-45 46-59 60(+)

9. How many different people did you have to deal with in order to get what you needed?

1 2 3 4 5 6 7 8 or more

10. What is an acceptable number of people to deal with in order to get what you need?

1 2 3 4 5 6 7 8 or more

11. In the end, did you get what you needed from our organization?

a) Yes

b) No

c) I got part of what I needed

12. Was the service/product provided without error?

a) Yes

b) No

If you answered **NO** to the question # 12, please comment on the errors you experienced in receiving our service/product.

Please circle the response that best describes your satisfaction with the following aspects of our service/product.

	HOW SATISFIED WERE YOU WITH THIS ASPECT OF OUR SERVICE/PRODUCT? 1 = Very Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very Satisfied N/A - Not Applicable	HOW IMPORTANT IS THIS ASPECT OF OUR SERVICE/PRODUCT TO YOU? 1 = Very Unimportant 2 = Unimportant 3 = Neutral 4 = Important 5 = Very Important N/A - Not Applicable
A. Time required to deliver the service/product.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
B. Number of contacts with the organization required to receive the service/product.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
C. Waiting time at the service location.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
D. Number of people dealt with to get the service/product.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
E. The service was provided in a fair and equitable manner.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
F. It was clear what to do if I had a problem.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
Service staff were:		
G. Courteous	1 2 3 4 5 N/A	1 2 3 4 5 N/A
H. Helpful	1 2 3 4 5 N/A	1 2 3 4 5 N/A
I. Good listeners	1 2 3 4 5 N/A	1 2 3 4 5 N/A
J. Competent	1 2 3 4 5 N/A	1 2 3 4 5 N/A
K. Had up-to-date information	1 2 3 4 5 N/A	1 2 3 4 5 N/A
L. Respectful	1 2 3 4 5 N/A	1 2 3 4 5 N/A
M. Flexible	1 2 3 4 5 N/A	1 2 3 4 5 N/A
N. Met my safety and security needs	1 2 3 4 5 N/A	1 2 3 4 5 N/A
O. Protected my privacy/confidentiality	1 2 3 4 5 N/A	1 2 3 4 5 N/A
P. Overall, how satisfied were you with the way the service/product was provided by the service staff?	1 2 3 4 5 N/A	

Q. If we could only improve in **three** of the above areas, which should we focus on? **Please circle three.**

A B C D E F G H I J K L M N O

13. Please provide us with any further comments you may have about the people who served you.

SECTION 2 - Access & Facilities

Please circle the answer that best describes your experience in these areas.

	HOW SATISFIED WERE YOU WITH THIS ASPECT OF OUR SERVICE/PRODUCT? 1 = Very Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very Satisfied N/A - Not Applicable	HOW IMPORTANT IS THIS ASPECT OF OUR SERVICE/PRODUCT TO YOU? 1 = Very Unimportant 2 = Unimportant 3 = Neutral 4 = Important 5 = Very Important N/A - Not Applicable
The facility that provided this service/product:		
A. Was easily accessible by telephone	1 2 3 4 5 N/A	1 2 3 4 5 N/A
B. Was conveniently located	1 2 3 4 5 N/A	1 2 3 4 5 N/A
C. Had adequate hours of service	1 2 3 4 5 N/A	1 2 3 4 5 N/A
D. Had adequate parking	1 2 3 4 5 N/A	1 2 3 4 5 N/A
E. Was easily accessible (e.g., there were no barriers to physically entering and using the buildings)	1 2 3 4 5 N/A	1 2 3 4 5 N/A
F. Had offices and waiting areas that were comfortable	1 2 3 4 5 N/A	1 2 3 4 5 N/A
G. Had signs that were easy to locate	1 2 3 4 5 N/A	1 2 3 4 5 N/A
H. Had signs that were easy to understand	1 2 3 4 5 N/A	1 2 3 4 5 N/A
I. Appointments with service staff were easy to make	1 2 3 4 5 N/A	1 2 3 4 5 N/A
J. Offered various methods of access (i.e., fax, internet, telephone, e-mail)	1 2 3 4 5 N/A	1 2 3 4 5 N/A
K. Overall, how satisfied were you with the accessibility of the service/product?	1 2 3 4 5 N/A	
L. Overall, how satisfied were you with the facilities for the service/product?	1 2 3 4 5 N/A	

M. If we could only improve in **three** of the above areas, which should we focus on? **Please circle three.**

A B C D E F G H I J K L M N O

1. If you found that the service location was not convenient, where would you like the facility to be located?

2. What are your preferred ways of accessing this service?

Please write in the numbers 1, 2, and 3 next to three of the items below to indicate your preferences.

- In Person*
- Telephone*
- Fax*
- Internet*
- E-mail*
- Posted mail*
- Courier*
- Other* _____

3. Do regular office hours meet your needs for accessing this service/product?

Regular office hours are defined here as Monday to Friday (approximately 08:30 am – 4:30 pm).

- a) Yes
- b) No

If you answered NO to question # 3 please answer the following question:

If regular office hours as described above do not meet your needs, and we were able to extend hours, what is your preference for extending office hours? (Circle one response)

- a) Open office earlier in morning one day a week (07:00 am for example)
- b) Keep office open later one evening a week (07:00 pm for example)
- c) Open office one day during weekend
- d) Other suggestions (fill in blank) _____

4. Please provide us with further comments that you may have about the access and facilities through which you received the service/product. (For example, do you have any special needs that were not met?)

SECTION 3 - Communication

To receive this service/product a number of aspects of our communications with you may have affected your experience. Please circle the response that best describes your service experience.

	HOW SATISFIED WERE YOU WITH THIS ASPECT OF OUR SERVICE/PRODUCT? 1 = Very Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very Satisfied N/A - Not Applicable	HOW IMPORTANT IS THIS ASPECT OF OUR SERVICE/ PRODUCT TO YOU? 1 = Very Unimportant 2 = Unimportant 3 = Neutral 4 = Important 5 = Very Important N/A - Not Applicable
In receiving this service/product:		
A. My questions were answered.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
B. The information that I needed was available.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
C. I received consistent information/advice.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
D. Written and verbal language was clear (e.g., not complicated).	1 2 3 4 5 N/A	1 2 3 4 5 N/A
E. I had a choice of English or French languages	1 2 3 4 5 N/A	1 2 3 4 5 N/A
F. Service staff were easy to understand.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
G. Documents and other information were easy to understand.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
H. Forms were easy to understand and fill out.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
I. Procedures were straight forward and easy to understand.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
J. It was easy to find out how to get the service.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
K. I was informed of everything I had to do in order to get the service/product.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
L. How satisfied were you with our communications?	1 2 3 4 5 N/A	

M. If we could only improve in **three** of the above areas, which should we focus on? **Please circle three.**

A B C D E F G H I J K L M N O

1. Which of the following would be the best way(s) for us to communicate with you about our service/product? Circle as many as you wish.

- a) media advertisements (e.g., newspapers, radio, TV)
- b) pamphlets/booklets in the mail
- c) posters
- d) information on the internet
- e) e-mail
- f) other (fill in blank) _____

2. Please provide us with further comments that you may have about the communications that supported the product/service you received.

SECTION 4 - Cost

To receive this service/product you paid a fee (e.g., license, registration, toll fee). Please circle the response that best describes your service experience relating to cost.

	HOW SATISFIED WERE YOU WITH THIS ASPECT OF OUR SERVICE/PRODUCT? 1 = Very Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very Satisfied N/A - Not Applicable	HOW IMPORTANT IS THIS ASPECT OF OUR SERVICE/PRODUCT TO YOU? 1 = Very Unimportant 2 = Unimportant 3 = Neutral 4 = Important 5 = Very Important N/A - Not Applicable
A. Billing for the service/product was timely.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
B. The billing process was straight forward.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
C. The method of payment was convenient.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
D. The payment period was reasonable.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
E. The cost was reasonable.	1 2 3 4 5 N/A	1 2 3 4 5 N/A
F. Overall, how satisfied were you with the costing of the service/product you received?	1 2 3 4 5 N/A	

M. If we could only improve in **one** of the above areas, which should we focus on? **Please circle three.**

A B C D E

1. What is your preferred method of payment? **(Please circle one)**

- a) Cash
- b) Cheque
- c) Debit Card
- d) Credit Card

2. The most reasonable payment period would be within: **(Circle one)**

- a) 1 week
- b) 2 weeks
- c) 3 weeks
- d) 4 weeks
- e) 5 weeks
- f) More that 5 weeks

3. An acceptable range of cost for this service/product would be:

(Fill in blanks) \$ _____ to \$ _____ .

4. Please provide us with further comments that you may have about the cost of the service/product you received.

SECTION 5 - General Questions

Please circle the answer that best describes your use of this service/product.

1. If you have used this service more than once, how often do you use it?

First time users > go to question #3

Every:

- a) week or less
- b) 2 weeks
- c) month
- d) 2-5 months
- e) 6-11 months
- f) year
- g) 2-5 years

2. When was the last time you used this service?

In the last:

- a) week or less
- b) 2 weeks
- c) month
- d) 2-5 months
- e) 6-11 months
- f) year
- g) 2-5 years

3. My use of this service was:

- a) a legal requirement > go to question #6
- b) my choice > go to question #4

4. Will you use this service again?

- a) Yes > go to question #6
- b) No > go to question #5

5. Please tell us why you will not use this service again.

6. Did you have any of these problems while getting the service? Check all that apply.

- I didn't know where to look
- I couldn't find the service in the Blue Pages of the telephone book
- I got bounced around from one person to another
- Telephone lines were busy
- I had trouble with automatic telephone answering systems or voice mail
- I was given incorrect information
- I got conflicting information from different people
- I had to travel too great a distance
- Parking was difficult
- No one took time to explain things to me
- Other (fill in blank) _____

Please circle the response that best describes how much you agree or disagree with the following general statements about this service/product.

	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree N/A - Not Applicable
A. This organization was responsive to my needs..	1 2 3 4 5 N/A
B. The staff who served me did an excellent job.	1 2 3 4 5 N/A
C. When I needed this service, I knew where to go to get it.	1 2 3 4 5 N/A

Please circle the number that best describes your overall level of satisfaction with this service/product delivery.

	1 = Very Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very Satisfied N/A - Not Applicable
D. Overall, how satisfied were you with this service/product?	1 2 3 4 5 N/A

7. If we could only improve three areas of this service/product delivery, in which three of the following should we make improvement upon?

Please write in the numbers 1, 2, and 3 to indicate the first, second and third most important areas for improvement next to the three items you select.

- ___ amount of time to receive service/product
- ___ number of contacts required to receive service/product
- ___ waiting time in line ups
- ___ waiting time on telephone
- ___ waiting time for mailed response
- ___ more methods to access service/product (e.g., internet, email, fax)
- ___ adequate office hours
- ___ convenience of office location
- ___ courtesy of service staff
- ___ skill/competence of service staff

- ___ ease of accessing information about the service/product
- ___ simple forms
- ___ clear instructions/directions
- ___ accurate and consistent information
- ___ dependability of the service
- ___ convenient payment methods
- ___ reasonable cost for service/product
- ___ other (fill in blank) _____

*Note: This is where organizations can place additional customized items.

SECTION 6 - Information About You (For External Clients):

We would like to know more about our clients to better understand your needs for this service/product. This information is used to assist our organization in planning improvements in the way we delivery our service/product to you. We would appreciate it if you would answer the following questions. This information will be **confidential** – *we have no way of identifying any specific people who fill in these questions.*

Please circle response that most closely describes your situation.

1. Gender

- a) Female
- b) Male

2. Age

- a) 18-24 yrs
- b) 25-34 yrs
- c) 35-49 yrs
- d) 50-64 yrs
- e) 65+ yrs

3. Please indicate the type of residence you live in.

- a) Single Family Dwelling
- b) Multi-Family Dwelling (townhouse, duplex)
- c) Secondary suite in a single family residence
- d) Apartment
- e) Other

4. Do you:

- a) Rent
- b) Own

5. Please indicate the type of household in which you live.

- a) Couple with no dependent children
- b) Couple with one dependent child or more
- c) Single parent with one dependent child or more
- d) Single adult
- e) More than 1 single adult sharing a residence
- f) Extended family
- g) Other _____

6. Are you presently employed?

- a) Yes > **go to question #7**
- b) No > **go to question #10**

7. If you are employed, do you work?

- a) Full time (35 or more hours/wk)
- b) Part time (less than 35 hours/wk)

8. What is your primary occupation?
- a) Homemaker
 - b) Manager, executive, business owner
 - c) Office work, sales, service
 - d) Professional
 - e) Self-employed
 - f) Student
 - g) Trades, factory worker
 - h) Other
9. Please circle the appropriate letter to indicate the type of organization in which you work.
- a) Municipal government
 - b) Provincial or Territorial government
 - c) Federal government
 - d) Other publicly funded organization, e.g., public health system, school system, university, courts, etc.
 - e) None of the above
10. If you are not employed, are you:
- a) Retired
 - b) Student
 - c) Receiving Employment Insurance
 - d) Other _____
11. Which of the following do you have personal access to? **Circle all that apply.**
- a) Computer
 - b) Internet
 - c) Fax machine
 - d) Electronic Mail (E-mail)
12. What formal education do you have, to date?
- a) Some public or high school
 - b) Completed high school
 - c) Some post-secondary
 - d) Completed college or university
 - e) Graduate or professional degree
13. What is your approximate total household income, before taxes? Your household includes all members of your family who are living with you.
- a) Under \$10,000
 - b) \$10,000 to \$19,999
 - c) \$20,000 to 29,999
 - d) \$30,000 to \$49,999
 - e) \$50,000 to 69,999
 - f) \$70,000 to 89,000
 - g) \$90,000 or more
14. Are you a member of a visible minority group?
- a) Yes
 - b) No
15. Are you Aboriginal?
- a) Yes
 - b) No

16. Where do you live?
(organization inputs relevant options here) (e.g., within community, region, province).

17. How long have you lived in Canada/Province/Region/Municipality/Community?
(the organization selects the appropriate variable)

- a) All my life
- b) Ten years or more
- c) Less than ten years

SECTION 7 - Information About You and Your Organization: (For Internal Clients)

We are collecting information about you and your organization to bring more meaning to the answers you have provided us with. This information is used to assist our organization in planning improvements in the way we deliver our service/product to you.

Please fill in blanks.

1. The name of your organization.

2. The name of the division or area in which you work.

3. Your position/title.

4. Length of time you have worked in this position (in number of months).

5. The length of time you have worked for this employer (in number of months).

6. The number of people who report directly to you.

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SECTION 8 - We are Most Interested in Your Comments

Please write any other comments you have about this government service/product. Feel free to elaborate on questions from the survey or any other thoughts you wish to convey relating to the delivery of service to you.

thank you
Thank you for providing this information!

Appendix B

Sampling - More Advanced Topics

FACTSHEET VIII

This Factsheet addresses the following more advanced topic in the area of sampling:

- Stratified sampling—what it is, when to use it, how to do it.

This Factsheet also provides:

- A crosswalk between the customized terminology with regard to customer feedback sampling used in this manual and Factsheets and the more general statistical terminology used by survey statisticians.
- A discussion of some other kinds of errors (beyond sampling error and non-response bias) that will be encountered in sampling.

A discussion of sampling without replacement and how this differs from sampling with replacement. This section also contains a description of how to select a sample randomly without using a computer or a computer spreadsheet.

Stratified Sampling

The basic principle underlying stratified sampling is very simple. For each subgroup of customers for which it is important to know their degree of satisfaction with a specified level of precision (i.e., with a known maximum level of sampling error), the sample size for that subgroup should be determined separately and a random sample of those customers selected separately. This can be done by applying the procedures presented in the manual and in **Factsheets III** and **IV** separately for each of these subgroups of customers. It is as though you are no longer conducting one survey but instead are conducting two or three (or more) surveys simultaneously, one for each subgroup of customers who are so important that their degree of satisfaction must be

known and tracked with a known maximum level of sampling error for that specific subgroup.

The results are then analyzed separately for each of these different subgroups, again using the methods of analysis that are presented in the manual. The results of these analyses are then used to track separately the degree of satisfaction of each subgroup of customers.

The results from each subgroup may then also be combined to give an overall result for all the subgroups surveyed taken together. They may be combined by using the following formula:

$$p_{\text{all}} = (f_1 \times p_1) + (f_2 \times p_2) + (f_3 \times p_3) + \dots$$

Where the equation continues for as many subgroups of customers as were used in the survey and where

p_{all} = the sample result for all customers served

p_1 = the sample result for the first subgroup of customers (i.e., the number of customers in the first subgroup who reported being satisfied)

f_1 = the fraction (percentage) of all customers served who fall in the first subgroup of customers

p_2 = the sample result for the second subgroup of customers

f_2 = the fraction (percentage) of all customers served who fall in the second subgroup of customers, etc.

For the above formula to give an accurate result for all customers, every customer must be included in one (and only one) of the subgroups. If, for example, there are five different kinds of customers and only two kinds are so important that they have to be tracked separately with a known level of sampling error, then the remaining three kinds of customers can be included in a third subgroup consisting of the remaining three kinds of customers grouped together.

There is one further consideration. Since you have set the sample size separately for each of the subgroups in order to get a known level of sampling error for each of them, you will know the level of sampling error for each subgroup, but you do not know the level of sampling error for all the customers taken together. There is, however, a second formula that can be used to determine this

E_{all} = the square root of the following sum

$$\begin{aligned}
 \text{sum} = & \frac{N_1^2}{N^2} \times \frac{N_1 - n_1}{N_1 - 1} \times \frac{E_1^2}{n_1} \\
 & + \frac{N_2^2}{N^2} \times \frac{N_2 - n_2}{N_2 - 1} \times \frac{E_2^2}{n_2} \\
 & + \text{etc.}
 \end{aligned}$$

Where

E_{all} = the sampling error for sample results applicable to all customers taken together

N = the total number of customers served

E_1 = the sampling error for the first subgroup of customers

N_1 = the total number of customers served for the first subgroup of customers

n_1 = the sample size for the first subgroup of customers

E_2 = the sampling error for the second subgroup of customers

N_2 = the total number of customers served for the second subgroup of customers

n_2 = the sample size for the second subgroup of customers

etc. (for each additional subgroup of customers served)

Note that what is referred to as sampling error in this section on stratified sampling is actually the standard error since values obtained from the sample were used in computing it. The standard error is used by statisticians to estimate the sampling error. (See the next section of this Factsheet for further clarification of this point.)

A Guide to the Applicable Statistical Terminology

In the discussion of surveys and sampling in the manual and Factsheets, some statistical terminology has been modified to make it easier for the non-statistician to understand. Some users of the manual may, however, wish to consult textbooks, reference books or journal articles on one or more aspects of sampling. Below is a way to compare terminology used here and the terminology used in general works and articles on sampling procedures.

TERMINOLOGY USED IN THIS MANUAL & FACTSHEETS	MORE GENERAL TERMINOLOGY USED BY SAMPLING STATISTICIANS
<p>1. "The customers served in a specific period of time" (for which information about their level of satisfaction is being sought)</p> <p>or</p> <p>"The customers served"</p> <p>or</p> <p>"The target group"</p>	<p>1. "The target population"</p> <p>or</p> <p>"The population"</p> <p>or</p> <p>"The universe"</p>
<p>2. "The sample of customers"</p>	<p>2. "The sample"</p>
<p>3. "The sample result" (shown as the percentage of customers who responded who said that they were satisfied in response to a specific question about some aspect of the product or service they received)</p>	<p>3. "The sample proportion"</p>
<p>4. The "master list" of customers served.</p>	<p>4. "The sampling frame"</p>
<p>5. "The sampling error" (values obtained from the full target)</p>	<p>5. "The sampling error" (when calculated using population—which is not possible under normal circumstances because it would be too costly to conduct a census of the target population. It is to keep costs to a reasonable level that you are using a sampling procedure.)</p> <p>"The standard error" (when calculated using values obtained from the sample—which are what you must use in most cases. This is so since the corresponding values for the entire target population are not known and cannot be learned without going to great additional expense. Going to such expense would defeat the purpose of using a sampling procedure rather than a census). "The standard error" is also known as "the standard error of the mean."</p>
<p>6. "The unit of analysis"</p>	<p>6. "The unit of analysis"</p> <p>or</p> <p>"The sampling unit"</p>
<p>7. "The 95% confidence level"</p>	<p>7. "A 95% confidence level" By tradition, the article "a" is used, which suggests that there is more than one kind of 95% confidence level. In fact there is only one kind of 95% confidence level, so "the" is more appropriate. "The" is used in this manual to improve clarity for the sake of non-statisticians.</p>

Other Kinds of Error Experienced in Sampling Surveys

So far, the discussion of error encountered in sampling surveys has been limited to three kinds: 1) sampling error, 2) non-response bias, and 3) the bias associated with use of a poorly chosen master list of the persons in the target group to be sampled. Each of these has been discussed earlier, sampling error was discussed in **Factsheet III**.

Non-response bias and the bias associated with use of a poorly chosen master list were discussed earlier. Two other kinds of error that occur in sampling surveys are described briefly below:

- **Reporting error.** This is the kind of error that results when the customer misunderstands the question asked and therefore gives an incorrect answer. It can also occur if the customer misunderstands how to use an interval scale (by thinking, for example, that a high number on the scale means “highly unsatisfied” when in fact it means “highly satisfied”). It can also occur when a customer purposely gives a wrong answer.

This kind of error can be kept to a minimum by pretesting the questionnaire on people who are similar to those who will be surveyed. Such pretesting can help identify: 1) questions that are confusing, 2) instructions on how to respond (e.g., how to use the interval scale to answer a question) to questions that are confusing, and 3) questions that customers may find so intrusive, threatening or offensive that they may prompt some customers to give a false answer.

Recording error. This is error on the part of the staff conducting the survey. Even if the customer has responded correctly, the survey staff may misunderstand or misrecord what the customer said (in a telephone or in-person survey) or may misread or misrecord what was written (in a mail survey). It should, however, be noted that, unlike sampling error, which results from the use of a probabilistic sampling procedure and is an inevitable consequence of using such a procedure, the

additional kinds of error identified above will be encountered whenever customers are contacted and asked to respond to specific questions. These kinds of errors would, for example, still occur even if a full census were conducted of all customers served. In other words, use of a census will eliminate sampling error, but reporting error and recording error will still occur. Similarly, non-response bias will occur in the results obtained from a census as much as in those obtained from a sampling survey.

Should the Sample be Selected With or Without Replacement

There is one basic decision that must be made before selecting a random sample of customers from the larger total number of customers served: will the selection be made with replacement or without replacement?

In order to explain what this means, an alternative procedure is described for selecting a random sample of customers that tracks closely with that presented in **Factsheet III**. This alternative procedure will, however, be simpler and easier to follow. In particular, the process will parallel perfectly the procedures in **Factsheet III**, but the procedure will be described not in terms of entering customer numbers into a spreadsheet on a computer, but rather in terms of putting the customer numbers on slips of paper, putting these slips into a box, and then pulling these slips from the box. This simpler alternative approach will clarify the difference between sampling with replacement and without replacement.

Here is the alternative approach for selecting a random sample of customers:

Begin by carrying out the actions called for in steps 1) and 2) of the procedure that begins on page 5 of **Factsheet III**. After having compiled the master list of persons described in step 2), take the following additional steps:

- a) For each of the customers on the master list, place the number corresponding to that customer on a slip of paper, one customer number per slip of paper. Then fold each slip of paper in a uniform way. All slips of paper should be identical in every way.

- b) Put the folded slips of paper into a box, and shake the box so that the slips of paper have been mixed well within the box.
 - c) Have someone begin to remove slips of paper from the box one at a time. While this is being done, the box should be held or positioned in such a way that the person removing the slips of paper cannot see them.
 - d) Have a sheet of paper (a recording sheet) ready with numbers running from 1 to a number at least twice the size of the sample size that has been chosen. For example, if the sample size chosen was 65, have numbers on the sheet of paper running up 130. This sheet will be used to record the outcome of the selection process.
 - e) As each slip of paper is picked from the box, unfold it, read the customer number on it, and record that number in order on the recording sheet. Then set that slip of paper aside (or throw it away). The customer number on the first slip picked should be recorded next to the number 1 on the recording sheet. The customer number on the second slip should be recorded next to the number 2 on the recording sheet, and so on. Continue this process until a slip of paper and a corresponding customer number has been picked for each number on the recording sheet.
 - f) Determine the number of customers to be included in the initial sample by taking into consideration both the desired sample size and the anticipated response rate. Thus, for example, if the desired sample size is 65 and the expected response rate is 85 percent, the number of customers to be included in the initial sample should be $65/85 \text{ percent} = 76.47$. The size of the initial sample should therefore be 77 (since it is always prudent to round fractions up to the next whole number in situations where a certain minimum level must be achieved).
 - g) The initial sample will then consist of the customers whose customer numbers are recorded next to positions 1 through 77 on the recording sheet. Carry out the survey using these 77 customers.
 - h) If the response rate in the survey is 85 percent or greater, nothing further need be done and you will have no further use for the recording sheet. If however, the response rate turns out to be less than 85 percent and all reasonable follow-up actions have been taken to increase the response rate and it is still less than 85 percent, then a determination should be made as to how many additional customers need to be added to the sample to bring the number of customers responding up to 65.
- If, for example, the number of customers responding is 62, three more responding customers are needed. Since the response rate so far has been $62/77 = 80.5 \text{ percent}$, the minimum additional number of customers who need to be added to the sample is $3/80.5 \text{ percent} = 3.73$ or 4 after rounding up. However, since there is no guarantee that the response rate for the next set of customers contacted will be identical to that of the customers already contacted, it might be prudent to add not 4 but 5 or 6 additional customers to the sample to ensure that a third survey cycle will not be needed. In this case, the number of additional customers to add to the sample is 6.
- i) Starting at the point where you left off in taking customer numbers from the recording sheet in step g) above (position 77 in the sample used here), take the customer numbers appearing in the next 6 positions on the list (i.e., those in positions 78 through 83), and add the customers' names corresponding to these customer numbers to the sample.

The above procedure is an example of sampling without replacement. This expression is used because the procedure called for slips of paper to be picked from the box and after each slip of paper was picked, it was not replaced (i.e., put back) in the box.

The alternative procedure would have been to sample with replacement. Using the same physical arrangements described above, sampling with replacement would have entailed picking the first slip of paper from the box, unfolding it, reading the customer number on that slip, folding the slip as it was and putting it back in the box, shaking the box up again, so that all the slips in

the box, including the one already removed and put back in into it (i.e., replaced into it), are once again fully mixed. A second slip of paper is then picked from the box, unfolded, the number read, the slip folded again and put back in the box and the box is shaken again.

This procedure continues until the same number of slips has been taken from the box as before or, to be more precise, until the same number of picks have been made from the box (in this case, 130).

One of the obvious implications of this procedure (which calls for sampling with replacement) is that it is possible for a single slip of paper to be picked from the box more than once. In fact, it could be picked three times or more. If that happens, that same number is recorded a second time (and if necessary a third time, a fourth time, etc.) on the recording sheet. Say, for example that the slip with customer number 278 was the fourth slip picked and was also the 36th picked. Then customer number 278 will appear on the recording sheet both at position 4 and at position 36. Slips continue to be picked a total of 77 times as before (i.e., a total of 77 picks are made from the box).

An additional slip should not be picked to make up for the duplicate picking of customer number 278. Customer 278 has been picked twice, so he or she now counts as two customers. This does not mean that customer 278 will be contacted two different times during the survey and on the second occasion be asked to respond a second time to the survey questions. Customer 278 will be contacted only once, but his or her response will be used twice in computing the survey results, as though two different customers had responded in exactly the same way to the survey questionnaire (which does in fact sometimes happen).

It is possible for a single slip to be picked three times or four times or more. Similarly, it is possible for two different slips to be picked two or more times each. When the total number of customers served is relatively low and the sample size is relatively large in comparison, multiple picks of two or more slips will be a fairly common occurrence.

The initial reaction of most people to a description of sampling with replacement is generally rather negative. Putting the slip of paper back in the box, knowing full well that it may be picked again, seems bizarre and unreasonable to them. So why is this procedure used? The answer is that the mathematics that result from using the sampling with replacement procedure is much simpler than those that result from use of the sampling without replacement procedure. The odds of any one slip being picked are the same throughout the sampling with replacement procedure. If, for example, there were a total of 534 customers served (and therefore 534 slips of paper in the box) from which the 77 customers to be included in the sample are to be selected, the odds that any one customer will be selected on the first pick are 1 in 534, the odds of any one customer being selected in round two are 1 in 534, the odds of being selected on the third round are 1 in 534 and so on. The odds of being picked never change from the beginning to the end of the process of picking 77 slips of paper from the box (and thereby picking 77 customers to be surveyed from the total of 534 customers served).

With the sampling without replacement procedure, however, the odds of any one customer being picked have constantly changing from the beginning of the process to the end. On the first pick, every customer's odds of having his or her slip picked are 1 in 534. But, after one slip has been picked, the customer number on that slip has been recorded, and that slip has been set aside, everyone's odds on the second pick have changed. For the customer already picked, his or her odds of being picked again are now zero. That slip has been set aside so there is no further chance of being picked on that or any further round of picks. But for the remaining customers, the chances of being picked are now 1 in 533. The odds are lower since there is now one fewer slip in the box—only 533 instead of the 534 that were there before the first pick was made. The odds of being picked on the third round then go down to 1 in 532. The odds continue to decrease in this same way throughout the process of picking 77 slips. Because of these changing probabilities, the resulting mathematics get rather complicated.

In summary, there are two different procedures for selecting a random sample of customers from the total number of customers served. Sampling without replacement is the process that seems most reasonable to non

-statisticians, but it results in very complicated mathematics that make calculations much more difficult. Sampling with replacement seems bizarre to most non-statisticians (especially counting a customer's response twice if that customer gets picked twice), but results in much simpler mathematics.

Statisticians have generally adopted the sampling without replacement procedure for selecting the sample in most surveys. Statisticians refer to this procedure as Simple Random Sampling (SRS), but it might instead be called the standard approach for random sampling. The standard stratified sampling procedure described in the first section of this Factsheet is a slightly more complex variant of Simple Random Sampling. Stratified sampling as described above is also based on sampling without replacement. This manual strongly recommends use of sampling without replacement because it is a procedure that employees who are not statisticians are much more likely to feel comfortable with and is the procedure most commonly used by statisticians as well.



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