Note on the Voice of the Customer

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We address marketing through the 4Ps and the 5Cs. The 4Ps tell us that, to achieve our marketing goals, we must coordinate the tactics of product, promotion, price, and place. How we select each of the 4Ps depends upon data. In particular, we must understand the 5Cs of company skills, customers, competition, collaborators and context.

In this note I address how we get information about customers, who they are and what they want. This information is critically important to design products that customers want to buy, to design advertising and other promotion that communicate those aspects of products and services that are important to customers, and to design the right pricing strategy so that customers feel they are getting value for the price paid. Although we call the methods "voice of the customer (VOC)," they have also been used to understand the wants and needs of an organization (voice of the employee) and the wants and needs of both the channel of distribution and the upstream supply chain (voice of the collaborators).

What Do Customers Want from An Electric Utility?

A major electric utility ("MEU") company in the US was concerned that it's large business customers were seeking alternatives such as self-generation of power and were also complaining to the public utility commissions about the service they were receiving. Managers at MEU believed that they could do better and satisfy their customers better. After much discussion, they decided to seek efficiencies that would enable them

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to reduce price, they would upgrade their systems to assure better power quality (consistency of a power without spikes, etc.), and they would assure that they had enough capacity to avoid brown-outs. These were all reasonable goals, but before they undertook capital improvements, they sought to learn the tradeoffs customers were willing to accept among price, power quality, and power consistency. They interviewed customers, such as head of a major bottling plant in their area. To carry out the interviews MEU hired an independent consulting company expert in the voice of the customer.

The interviewer were painful for MEU to watch. Almost immediately after the interviewer introduced himself, customers began berating MEU as non-responsive and arrogant. Customers were not particularly concerned with the price per kilowatt hour nor the power quality, which was quite good. They were extremely upset by a lack of perceived service and by the fact that MEU did not understand their businesses.

For example, the head of operations at the bottling company complained that, while the cost per kilowatt hour was low, the total cost of electricity was high. He felt that MEU should work with him to help his firm identify how his firm might use electricity more efficiency to lower the total bill. For example, could MEU identify areas of operations where his firm could use more electricity at night when rates were low or were there alternative systems that could operate differently to use less electricity. He was very explicit that he wanted MEU to know his business and to listen to his needs. He wanted MEU to make him a hero to his company. He would pay a premium for good ideas and strategic consulting.

Billing was a major issue. Customers perceived the bills as hieroglyphics. They received one bill for multiple locations, but they needed greater detail by location, by time of day, and other variables so that they could analyze their own power needs. Customers were always experimenting with their operations and wanted MEU to work with them and provide data with which to evaluate those operations.

Customers expressed outrage over perceived fairness. For example, if one of MEU's components broke on a weekend, MEU charged a premium for repair (unless the customer wanted to wait until a weekday). Customers' plants often ran on a 24/7 cycle and lost money whenever they were idle. Customers believed that if it was an MEU piece of equipment that failed, then MEU

should fix it on the customer's schedule.

There were many other insights from the interviews and many of the insights led directly to changes in the way MEU did business. The insights could be summarized by the observation that the customers wanted their businesses to run efficiently and wanted MEU to be a partner and "own" that goal. As long as MEU was taking an arms-length perspective on their customers' operations, MEU would never satisfy their customers. On the other hand, customers were willing to pay for electric-use consulting—a business that could provide much higher margins for MEU than electric power generation and distribution.

Another Example: Blood-gas Monitors

When a patient is in the intensive care unit (ICU) of a hospital, the medical staff is constantly monitoring the patient's blood gases.[1] At the time of this analysis there were seven critical tests which, together, determine how well the patient is breathing. These tests are critical. If the patient is breathing poorly and nothing is done, the patient could die in less than an hour. Furthermore, the blood that is tested is arterial blood rather than veinous blood, so it degrades quickly and should not be contaminated by air.

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Blood gas monitors enable the medical staff to test blood at the point of care; point of care testing is faster, more effective, but more expensive. It is also regulated. Everyone using the equipment has to be certified yearly, every test has to be logged, and the machine has to be recalibrated every eight hours.

One of the primary manufacturers of blood-gas monitors, disguised here as "BGM," wanted to develop a more-accurate machine. To determine the requirements for accuracy, they interviewed physicians and other medical staff. The interviews quickly determined that while "accuracy" is important, the medical staff really has no way to assess accuracy. Current accuracy is sufficient to make critical decisions and patients and the medical staff relies on the FDA to certify ac-

[1] The blood gas example is due to Gerry Katz at Applied Marketing Sciences, Inc. Some details have been disguised for this note. The blood gas analyzer that is shown is not the particular blood gas analyzer in the example.

curacy. As long as the machine remains certified, perceived accuracy is sufficient.

But customers were not satisfied with BGM's products. First, training was expensive. Three shifts of workers and virtually everyone in the ICU had to be trained on the machine and certified yearly. A second concern was wasteful tests. Not every one of the seven tests was required every time and physicians often ordered additional tests that the machine did not do. Each test required reagents, which were costly. Indeed, BGM's business model was "blades and razors." They made significant margins on the reagents. The medical staff resented paying for reagents for tests they did not need.

Customers were concern about contamination. The machine itself had numerous buttons—perfect places for bacteria to grow behind the buttons. To use the machine, medical personnel put a syringe in a bag of blood, carried the syringe to the machine, put a few drops on a card, and put the card in the machine. Medical staff, who were used to injecting patients with a syringe, had a habit of squirting a few drops to clear the air. But this is an ICU with patients that are often infected with contagious diseases. Carrying blood-filled syringes across the room and squirting blood into the air was not good practice.

We will hear the interviews and discuss this example in class and talk about how BGM solved addressed each of the issues. The net result was a machine that made training, certification, and calibration easy, that greatly reduced the risk of contamination, and satisfied customers with respect to required tests and additional tests. (It was not feasible to engineer the machine to do a subset of the seven tests. BGM had to be more creative.) By listening carefully to the customer, BGM earned a two-year lead time on its competitors, earned an image of a top innovator, and became the top player in the market. Had they come out with a machine that was simply more accurate, the market would have yawned.

What is the Voice of the Customer?

In electric utility example, in the blood gas example, and in thousands of examples every year, large firms, small firms, and entrepreneurs achieve breakthroughs by listening to their customers. These examples are typical. The firm (or entrepreneur) sees the world through its own eyes. The customer's view can be very different. However, sales (and profit) occur when the cus-

tomer's needs are fulfilled.

We normally think of the voice of the customer (VOC) as having three components. The first component is the list of customer needs. The second component is a structure so that the customer needs can affect managerial decisions. And the third component is customer preferences with respect to the customer needs so that the firm (or entrepreneur) can make profitable decisions.

Customer Needs

Managers often define customer needs by easily measureable quantities. For example, MEU focused on price, power quality, and power consistency with measures like price per kilowatt hour, voltage spikes, and percent "up time." BGM wanted to identify how to quantify accuracy. Neither strategy would have been effective.

Customer needs are qualitative descriptions of that which the customer wants from the product or service. For example, in smartphones it might be tempting to measure screen resolution in pixels per square centimeter. Clearly more pixels are better. What the customer might really want is a screen that is easy to read in all lighting situations, or a screen that givens clear, crisp images, or a screen that makes video playback look realistic, etc. Pixels are just one of many ways to achieve these goals. By defining needs in the words of the customer product designers, marketers, and managers can be more creative in their solutions. Apple introduced a retina display (resolution higher than the eye can distinguish pixelation) and Amazon introduced automatic backlighting and a crisp screen in their Kindle Paperwhite.

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A financial services example is illustrative. The firm was concerned with the service provided by their telephone representatives—their primary source of sales. It was clear that customers would prefer less wait time rather than more wait time, fewer transfers among representatives rather than more transfers among representatives, and quick answers to questions rather than long answers to questions. These metrics were easy to measure. In one experiment the fi-

nancial services firm rewarded representatives for answering the phone quickly, not transferring calls, and answering questions quickly.

During the experiment customer satisfaction decreased! In retrospect, it is easy to see why. Yes, customers wanted fast responses all else equal, but customers did not want fast responses if their questions were not answered to their satisfaction. Customers preferred representative who took a little more time if that was what was necessary to get the best answer and customers were willing to accept transfers if the new person was better able to answer their question. The customer need was "get my question answered accurately and quickly," but with accurate being the more important of the two criteria.

A customer need is a description of what the customer wants in the customer's own words. It is not yet a solution. ICU medical personnel want a blood gas monitor that minimizes the cost or disruption of training, calibration, and certification. It is up to BGM to decide how best to achieve those goals. MEU's customers wanted MEU to help them run their businesses more profitably. It was up to MEU to come up with creative solutions to achieve those goals.

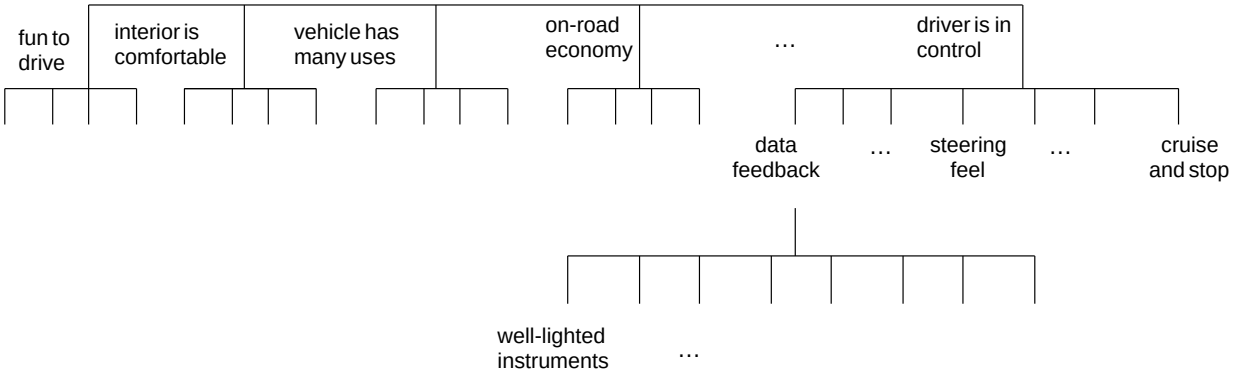
If successful a VOC will provide a list of customer needs which, as a whole, helps the firm (or entrepreneur) see the world through the eyes of its customers. The list might be fairly long and fairly detailed. A list 100 customer needs is not atypical; some lists can be 200-300 customer needs.

Structuring Customer Needs

To evaluate a marketing strategy or to design a product, we need more structure than a simple list of hundreds of customer needs. Some needs are more critical to the customer than others. Many needs describe similar concepts and some needs elaborate details that are summarized by other needs' statements. Managers or entrepreneurs who are new to VOC often complain that there is too much information.

It is typical to structure customer needs into a hierarchy of primary, secondary, and tertiary needs. . Primary needs, also known as strategic needs, are the two-to-ten top-level needs that set the strategic direction for marketing. For example, primary needs for an automobile might be "fun to drive," "interior is comfortable," "vehicle has many uses," "on-road economy,"

"driver is in control," and other needs.



Each primary need is elaborated into three-to-ten secondary needs. (Secondary needs are also known as tactical needs.) Secondary needs indicate more specifically what must be done to satisfy the corresponding primary (strategic) need. For example, if "driver is in control" is the primary need, then the secondary needs tell the marketing team how the customer judges that the driver is in control, say by the data feedback, the steering feel, the smoothness of stopping, etc. These tactical needs focus efforts on those more-detailed benefits that fulfill the strategic direction implied by the primary need.

The tertiary needs, also known as operational needs, provide detail so that engineering, R&D, and, perhaps, the advertising agency, can develop detailed product characteristics or advertising strategies that satisfy the primary and secondary needs. For example, a customer may judge data feedback by well-lighted instruments, a heads-up display, the feel of the accelerator and brake pedals, the on-board computer on the instrument panel, and the various functions of the console display. Improving the operational needs improves the tactical needs, which, in turn, improve the primary strategic needs.

Prioritizing Customer Needs

After listening to the customer, identifying needs, and structuring those needs, the manager or entrepreneur should be able to generate many creative solutions. But some solutions are more costly than others. Some solutions might improve performance on one strategic need at the expense of another. For example, making the interior of an automobile larger (and thus more

comfortable) might sacrifice fuel economy. (Of course, creative solutions might improve both.)

To set priorities we require an indication of the tradeoffs that the customer is willing to make among the customer needs. For example, if an improvement in interior comfortable is more important to the customer than the corresponding decrease in fuel economy (and if the improvement does not adversely affect other needs and costs), we may want to implement that change. If the customer is more concerned with fuel economy, we may not want to implement that change.

Engineers will immediately recognize a scaling issue in the measures of "customer-need importance." Customer needs are qualitative constructs; they are not hard "engineering" measures such as miles per gallon, meters per second^2, or other constructs that can be measured on an easy-to-define natural scale. When we measure "importances" for the customer needs we must make sure that both the customer and we understand that what it means to improve a customer need by one unit of the measurement scale. Another note in this series discusses conjoint analysis to deal explicitly with varying scales and hard "engineering" measures. Conjoint analysis enables us to make quantitative tradeoffs among marketing actions and product development. For example, in a recent case I used conjoint analysis to quantify customers' willingness to pay for a smartphone's touchscreen features.

In a VOC we are interested in directional suggestions. We accept the approximate scaling of the customer needs as long as we can be reasonably consistent in how we interpret the scaling of customer needs. When we ask a question such as: "Is it more important that we improve interior comfort or on-road economy?", most customers can answer this question. Customers answer this question because they have an implicit scale in mind when they evaluate alternative automobiles.

To anchor measures importances to customers' implicit scaling, we ask customers about their perceptions of how products perform on customer needs. For example, a customer might be able to evaluate the relative interior comfort and on-road economy of a Honda Accord and a Chevrolet Malibu. If we then ask the importance question in relation to the customer's evaluation of the Accord and Malibu, we allow the customer to reveal to us the scale by which the customer judges importance. Suppose, for the sake of illustration, that the Malibu has more interior com-

fort and the Accord better on-road economy. Then the question we are really asking is: "Would you prefer that the Malibu had improved on-road economy (as that of an Accord), but sacrificed interior comfort (as that of an Accord)?"

An Example: MIT Sloan is always seeking new ideas for its curriculum. A few years ago, before action learning became a significant part of our curriculum, we surveyed potential students. The primary and secondary needs were:

Brand

1. The business school has wide-name recognition (e.g., known worldwide).
2. The business school is highly rated by independent publications (e.g., US News & World Report).

School Experience

3. Students at the business school have a strong sense of community.
4. The business school has a collaborative atmosphere.
5. Students are satisfied with their overall experience.

Academics

6. The business school has a reputation for strong academics.
7. The business school is known for innovative research.

Teaching

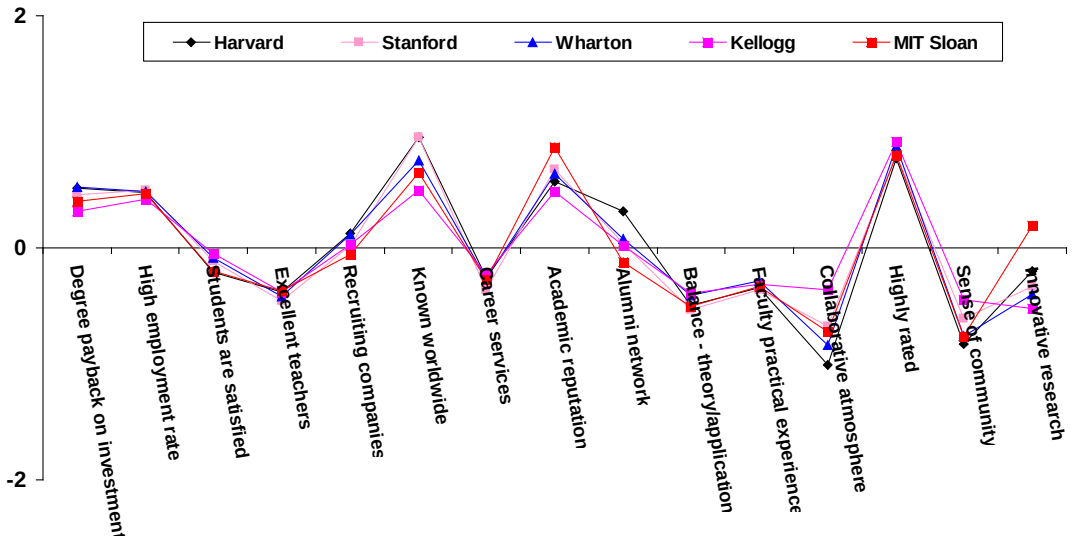
8. The business school faculty are excellent teachers who are good at communicating complex material.
9. The business school professors have practical business experience.
10. Classes have a balance between theory and real-world application.

Career

11. The business school graduates have a high employment rate.

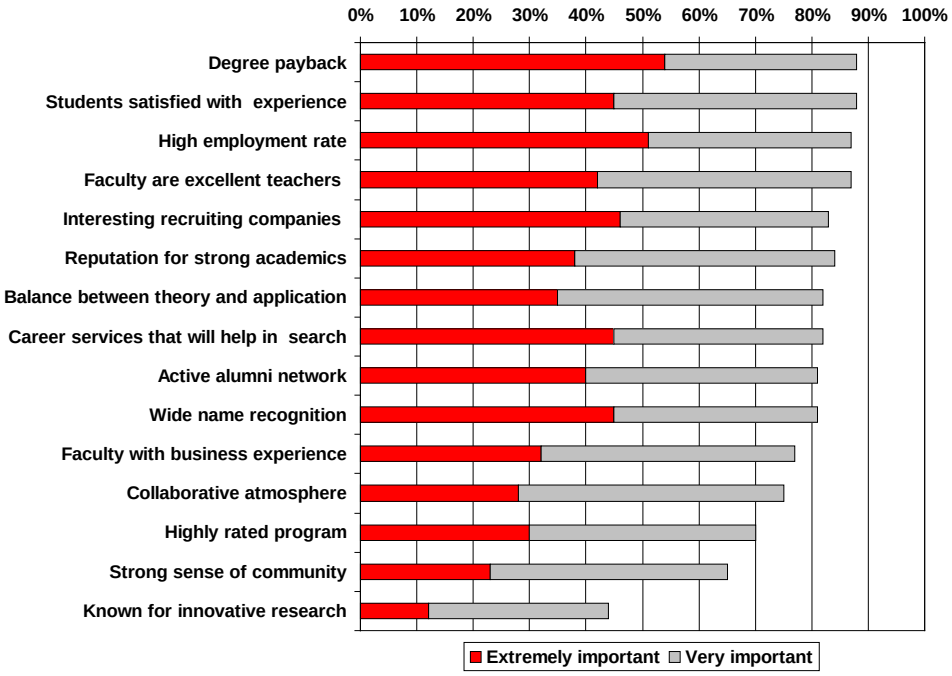
12. The business school has Career Services that will help me in many aspects of my career search.
13. The MBA degree from this business school continues to pay back on investment long after graduation (e.g., salary increases).
14. A wide selection of companies and industries that recruit at the business school meet my interests.
15. The business school has an active, organized network of successful alumni

Potential students were asked to rate MIT Sloan and its major competitors on these customer needs. We obtained the following perceptual map.



Note the high correlation among the top schools. Among this highly-competitive set of schools, MIT Sloan did relatively well on some customer needs (innovative research, academic reputation) and relatively poorly on other customer needs (alumni network, collaborative atmosphere). But on which needs should MIT Sloan innovate?

To obtain priorities, potential students were asked to state the importance to them of each customer need. Because potential students had already provided ratings, we can interpret the importances relative to the differences in the ratings of the customer needs among schools. The importances were:



MIT Sloan had its greatest relative strength on the least important customer need! It did not have the highest rating on important needs. Based on this study, MIT Sloan made a number of changes to improve its ability to attract the best students. I won't detail those changes here, but you might want to take a moment to evaluate our performance on these customer needs (and to consider your own importance judgments). For example, does action learning lead to a collaborative atmosphere, a balance between theory and application, and an ability to learn skills that will enhance our ability to attract recruiting companies and help you obtain interesting and exciting opportunities? Consider other initiatives such as "values at Sloan," enhanced efforts by the development office to improve the alumni network, a change in the way we rate courses and professors (and make the data available), improvements in the physical space, tracks for finance, entrepreneurship, and enterprise management, etc. Do any or all of these improve our ability to deliver an education that meets important customer needs? We now turn to measurement.

METHODS TO OBTAIN THE VOICE OF THE CUSTOMER

How to Identify Customer Needs

To identify customer needs we need to experience the experience of customers. We want our list of customer needs to be in the customers' words and to describe the world through their eyes. We want to listen.

There are two primary methods to identify customer needs: experiential interviews and focus groups. In an experiential interview, the interviewer asks the customer to describe his or her experiences in great detail. For example, an interviewer might ask a customer to imagine that he or she is driving to work and ask the customer to describe in detail everything the customer experiences from the moment (in the customers' house or apartment) that the customer begins getting ready to commute until the moment the customer arrives in his or her office (office, not parking lot or garage, or off the subway or bus, etc.). The interviewer might learn about how the customer prepares his or her coffee so that it fits in the cup holder, or chooses clothing because the vehicle takes a few miles to warm up. Or the interviewer might experience the customer's fear as he or she parks an unblemished vehicle is a tight space at work. Or the interviewer might hear about how visibility is poor at blind corners or that other vehicles dart in and out of lanes. Or the interviewer might learn that a customer commutes by bicycle and is perspiring when he or she arrives at work. Or finds no place to store materials that cannot be easily carried by bicycle. By the end of the interview, the interviewer should be able to understand everything that the customer cares about when commuting.

An experiential interview <u>is not</u> a series of questions. It is better to use inquiries such as "tell me more," "please elaborate," "can you be more specific," "how does that make you feel," "what could be done better," etc. Rarely will any given customer enunciate every need. Needs accumulate over customers. If the interviewer has already explored a customer need with a few customers, the interviewer may want to spend less time on that need with the remaining customers and spend more time exploring other needs. Each interview is different; variety is good because the goal of the experiential interviews is to generate a list rather than identify how many customers have that need.

The alternative to experiential interviews is an experiential focus group. The concept is

similar except customers are interviewed in groups of 6-8 rather than one-on-one. The advantage of experiential interviews is usually more depth. The advantage of a focus group is inter-subjectivity—some customers will be stimulated by other customers' discussions. Inter-subjectivity is important if there are group dynamics that must be studied. However, in focus groups it is usually best to have relative homogeneity among subjects within a group and seek heterogeneity by running multiple focus groups. One danger of focus groups is that a few customers might dominate the conversation. A good moderator notices quiet customers and gets them to join in the discussion.

In the action-learning project in this course on marketing management (15.810), you are asked to interview two customers each. I wish it could be more, but I recognize the time commitments you face. If you have time, I encourage you to do more interviews to gain experience. There is a substantial learning curve. You will find that each interview is better than the last and that improvements may continue for many customers. To simulate this learning curve your group might want to do interviews sequentially. One member of your group might interview two customers and talk to your group about what was learned and about the process of interviewing. The second member can incorporate this learned experience and build upon it, continuing until all group members have interviewed two customers each.

Eight interviews (two each from four group members) does not seem like many interviews. It is not enough, but in the action-learning project we pretend it is enough. It may surprise you, but it is almost enough.

An MIT Sloan project quantified the number of interviews that were necessary. The product category was a complex piece of office equipment; the interviews and focus groups were run by a professional market research firm. Using methods developed by Abbie Griffin (a former 15.810 TA), the MIT Sloan project plotted the number of customer needs that were identified by subsequent interviews or focus groups. (This plot is a randomization over all possible orders of interviews so that the results are not sensitive to differences in the ability of customers to articulate needs.)

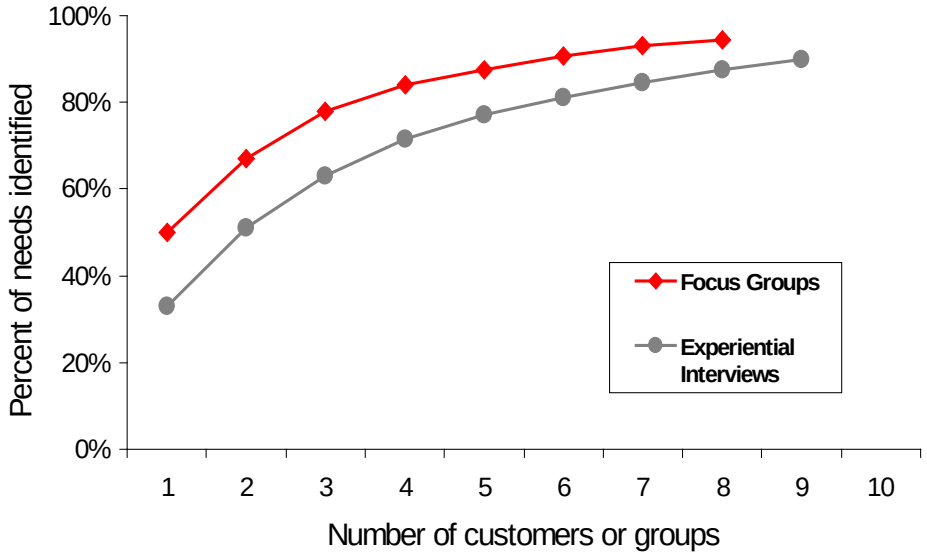


Figure 1. Comparison of Focus Groups and One-on-One Interviews

The surprising result was that roughly seven two-hour focus groups or roughly ten one-hour experiential interviews were sufficient to identify 90% of the customer needs. This result has been replicated in other categories. Sometimes more interviews are necessary, but usually twenty interviews are sufficient for each distinct segment of customers.

The comparison between focus groups and experiential interviews is also interesting. If we look horizontally at Figure 1, we see that two interviews gives about the same number of customer needs as one focus group; four interviews gives about the same number of customer needs as two focus groups, etc. Focus groups are about twice as effective as interviews, but take twice as long. As one experienced manager said: “An hour of transcript time is an hour of transcript time.” The key seems to be the time spent talking to customers.

Figure 1 also suggests that entrepreneurs might do their own VOC interviews. They may need to do more than would be done by experienced interviews because they must learn the method as they interview. But they can certainly substitute their own time for the monetary investment. (Training is also widely available and quite good.)

How to Structure Customer Needs

The key to structuring customer needs is that the structure must be from the customer’s

perspective. Table 1 compares two lists of primary needs from a study of portable coolers such as the type one would bring on a picnic, to a sporting event, or to the beach. The sorting began with 220 customer needs. Some were "winnowed" because they were redundant descriptions, but the remaining were sorted into primary, secondary, and tertiary customer needs. The primary needs on the left were those identified by customers; the primary needs on the right were those identified when the product-development team attempted to sort the needs on their own. It is clear that the primary needs on the left describe a cooler by how it is used by customers. The primary needs on the right describe how the cooler is built by the firm. Subsequently, product designers found the left structure more descriptive and better for generating creative product designs than the right structure.

The comparisons in Table 1 are indicative. Applied Marketing Science, Inc. has done hundreds of VOCs and in many of these they've compared team-sort and customer-sort diagrams. In every comparison the customer-sort diagrams were much better at describing the way customers use products and services and much more useful for generating creative solutions. We now review two methods to obtain customer-sort diagrams.

Customer-sort Diagram	Team-sort Diagram
attractive, good-looking	
convenient	container utility
works well	convenient
right size	physical characteristics
maintains food temperatures	container price
carries many things	thermal characteristics
easily movable	

Table 1 Group-consensus vs. Customer-sort Food-Carrying-Device Hierarchies

Group Consensus Process

The group consensus process uses a team of customers to impose structure on the cus-

tomer needs. Consensus processes are often known as “affinity charts.” Although some firms substitute managers for customers, we do not recommend such an approach.

To create an affinity chart each team member is given a roughly equal number of cards or Post-It ™ notes; each card or note bears one customer need. One team member selects a card from his (her) pile, reads it aloud, and places in on the table (or wall). Other members add "similar" cards to the pile with a discussion after each card. Sometimes the card is moved to a new pile; sometimes it stays. The process continues until the group has separated all the cards into some number of piles of similar cards, where each pile differs from the others in some way. The team then structures the cards in each pile into a hierarchical tree diagram with more-detailed needs at lower levels, and more-tactical and strategic needs at the upper levels. To select a higher-order need, say a secondary need, to represent a group of tertiary needs, the group can either select from among the tertiary needs or add a new card to summarize the group of relevant tertiary needs. Throughout the process the team can rearrange cards, start new piles, or elaborate the hierarchy.

Customer Sort and Cluster Process

In a customer-sort process, twenty to fifty customers are given a deck of cards, each bearing one customer need. They are asked to sort the cards into piles such that each pile represents similar needs and differs from the other piles in some way. The number of piles and the exact definition of similarity is left unspecified. After completing the sort, each respondent is asked to choose a single need from each pile, called an exemplar, which best represents the customer needs in the pile. From the sort data we create a “co-occurrence matrix” in which the ij^{th} element of the matrix is the number of respondents who placed need i in the same pile as need j. We label each need with the number of times it was chosen as an exemplar.

To develop a structured hierarchy from the customer-sort data, market researchers use a statistical method known as “Wards’ cluster analysis” to cluster the co-occurrence matrix. The exemplars then provide the names of the clusters. The details of Wards’ method are available in most statistical packages such as SPSS, SAS, or Stata. The basic idea is that similar needs are placed together into a tree structure. The primary needs are at the top of the tree, the secondary

needs are further down, and the tertiary needs form the roots of the tree. Exactly where to cut the tree, that is, when a division of a primary need becomes two secondary needs rather than two new primary needs, requires judgment combined with information from the statistical analyses. The exemplars provide valuable guidance in making these judgments.

Sorting Customer Needs for the 15.810 Action Learning Exercise

For the action-learning exercise we recommend the group consensus process. If feasible, and if your chosen project involves a product with which your fellow students might be familiar, you might ask another 15.810 team to cooperate with you. You act as customers and sort their needs. They can act as customers and sort your needs. Failing that, you can rely upon the knowledge gained from your customer interviews and sort the needs yourselves. This will help you understand the methods, but be careful to sort the needs from the perspective of the customer not the perspective of the firm.

Methods to Set Priorities

One of the most-studied issues in marketing science is the methods by which firms estimate customer priorities. We do not review all of these methods here, but rather demonstrate examples of the types of measurements that are used successfully when identifying priorities with respect to perceived customer needs. For measuring preferences for product features and for greater quantification, see “Note on Conjoint Analysis.”

We illustrate three methods with data collected by one of the largest and most-sophisticated consumer products firm – a firm that is known as a leader in marketing and marketing research. This firm measured or estimated customer's importances for 198 customer needs using three different methods:

- 9-point *Direct-rating* scale in which customers answered for each need "How important is it or would it be if: ...?".
- *Constant-sum* scale in which customers allocated 100 points among the seven primary needs, then allocated 100 points to each set of secondary needs within each primary-need group, and finally allocated 100 points among each set of tertiary needs within each

secondary-need group.

- *Anchored* scale in which customers allocated 10 points to the most important primary need and up to 10 points to the other six primary needs. Similarly up to 10 points were allocated to secondary needs corresponding to each primary need and to tertiary needs corresponding to each secondary need.

The following is an anchored scale. (These primary needs are illustrative only and are disguised relative to the true product category.)

When thinking about choosing a laundry detergent, how important is it that the laundry detergent satisfies the following needs:

Cleans your clothes well	*[ ]*
Is safe and gentle for synthetic fibers	*[ ]*
Is good for the environment	*[ ]*
Clothes are ready to wear after drying	*[ ]*
It is easy to do the laundry	*[ ]*
My clothes smell fresh and clean	*[ ]*
Good value for the money	*[ ]*

Questionnaires were mailed to 5,600 randomly selected consumers (1,400 for each method plus 1,400 who rated products on the customer needs). Response rates were very good (75-78%). (All recipients of the questionnaires were given a $5 incentive. Those that responded in a week were entered in a lottery for $100.) In addition, the constant-sum questionnaire was mailed to an additional 1,400 consumers from a national panel. The response rate for that sample was 90%. The rank-order correlation of the importances as measured by the random sample and the panel sample was 0.995.

To test whether the importances made sense for setting priorities among product-development programs, the professional product-development team created seven product concepts. Each concept was created to emphasize one of the primary customer needs while stressing that the other six customer needs would not be any better or worse than existing products. The concepts went through two pre-tests with actual consumers and were modified until the firm felt

that the product concepts did indeed "stretch" the consumer needs. (The actual concept statements are proprietary. The winning concept ultimately led to a highly successful product.) Consumers were asked to evaluate the concepts by expressing their interest and preference for the concepts. Interest was measured by a 9-point scale. Preference was a rank ordering of the seven concepts. Table 2 indicates that consumers' interest and preference is highly correlated with the self-stated measures of primary needs.

	Anchored Scales (max = 10)	Constant Sum (sum to 100)	Directly Stated (1 to 9 scale)
Correlation with preference for concepts	0.93	0.93	0.89
Correlation with interest in concepts	0.96	0.96	0.96

Table 2. Comparison of Three Methods to Set Priorities for Perceived Needs

The direct, anchored, and constant-sum measures give similar rank-order results and each correlates with interest and preference. These results are typical. The scientific data to date suggest that any reasonable question format can be used to measure importances for perceived needs, as long as the specific questions are pretested carefully so that customers understand the question format and as long as customers also rate products or product concepts on the customer needs. The ratings on customer needs establish a relative scaling of the customer needs. Other data, not shown here, suggest that conjoint analysis is the better method when decisions are being made with respect to product features or physical characteristics rather than perceived needs.

Is frequency of mention a surrogate for importance?

It is a reasonable hypothesis that customers will mention most those needs that are most

important. If this were true, then we could save time and money by using frequency of mention as a surrogate for importance. Alas, the data do not support this hypothesis. High priority needs do not seem to be mentioned more often that low priority needs. It appears to be the case that we need to undertake formal market research surveys (or conjoint analyses) to provide priorities for the customer needs.

Customer Segments

Once data on priorities are obtained for each respondent, these priorities can be "clustered" to identify different "benefit" segments in the market. For example, a clustering of the customer needs for the laundry product might identify one segment that cares primarily about cleaning clothes, another that cares primarily about clothes being ready to wear without much effort, and a third that puts a high priority on product that are safe for the environment. Marketing managers can decide to target any or all of these segments.

In some cases, before undertaking a VOC, the marketing team might already have identified the segments of the market that they wish to serve. If marketing managers can identify segments by other means, they can collect a VOC for each identified segment.

Prioritizing Customer Needs for the 15.810 Action Learning Exercise

For the action-learning exercise we do not recommend that you survey customers to quantify customer preferences. Survey design is more difficult than it might appear and requires both experience and theory in order to obtain accurate responses. Survey design, conjoint analysis, and related topics will be covered in 15.822, "Strategic Market Measurement." For 15.810, use your judgment about priorities based on your customer interviews. Using judgment will enable you to work with the concept of customer priorities so that, when you obtain accurate data, say in 15.822, you have the requisite experience using such customer-importance data.

Summary

The voice of the customer is critical to marketing and product development. Measure-

ment is both feasible and practical. Established methods excel at identifying customer needs, sorting these needs into a hierarchy, and providing priorities for the customer needs.

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