

# Voice of the Customer Tool Description

In this document we will explain how to use the Voice of the Customer Tool and interpret the results. The Voice of the Customer is discussed in sub-section 4.1 “Market Data and Research” under section 4 “Market Opportunities” of Module III in the WIPO publication *Using Inventions in the Public Domain: A Guide for Inventors and Entrepreneurs* (2020). It is also discussed in section 9 “Design” of the publication where the use is to refine the design requirements for the product or service. Here, it is used for ideation.

## What is the Voice of the Customer?

The Voice of the Customer is literally that. It is what current and/or potential customers say about what benefits, tangible features, and augmented features they want out of a good or service and why. It may also include their use cases. In short, it is their needs and requirements. Most times, if you are willing to listen to their voices, they will tell you. The customers you want to talk with and listen to are in the targeted market segments mentioned in the Project Charter.

The Voice of the Customer Tool guides you through identifying and interviewing a target audience relevant for your new product development (NPD) project. It also helps you extract salient information that can be useful for the ideation and design of your product or service. It is also helpful for developing your market entry strategy.

By collecting and helping you analyze information from potential customers and end-users, and from observations by experts, the Voice of the Customer Tool can be used to address adoption risk, which refers to the risk of whether the intended customers will buy a product or service, and whether end-users will deploy it. This tool helps you determine if the assumptions about customers in the Project Charter are correct and to further clarify what core benefits, tangible features, augmented features, and other factors could affect the buying and use of a product or service like the one you are developing. When used early in the NPD process, guidance from the Voice of the Customer can influence how you design a product or service to meet customer requirements in a way that might increase the likelihood of purchase and use.

Suppose you are a craftsperson making woolen sweaters. To diversify your products and increase production, you are considering an automated machine which can be programmed to do custom work. Less labor and more products could mean higher sales and revenue. But will your potential customers buy these new products if they are not handmade?

The only way to know is to do market research. It is not enough to use the internet to search for trends; you must talk to current and potential customers and end-users in order to get a feel for what people want, today and in the foreseeable future. It is also useful to talk to experts who track your targeted market, as they may have better knowledge of relevant factors over mid- and long-term forecasts. Interviews with potential customers would allow you to test their views on products that look handmade but were created by a machine.

In your discussions, you may also learn about better ways of moving forward. An expert may tell you about a patent for an invention that allows you to provide a custom-made product that looks handmade but at a far lower cost. You can then determine whether the patented invention is in the public domain where you want to conduct business and sell your goods or if it is available for licensing. By listening to the Voice of the Customer, you gain information that you can use to

mitigate risk and gain confidence your product will have a competitive advantage in the targeted market.

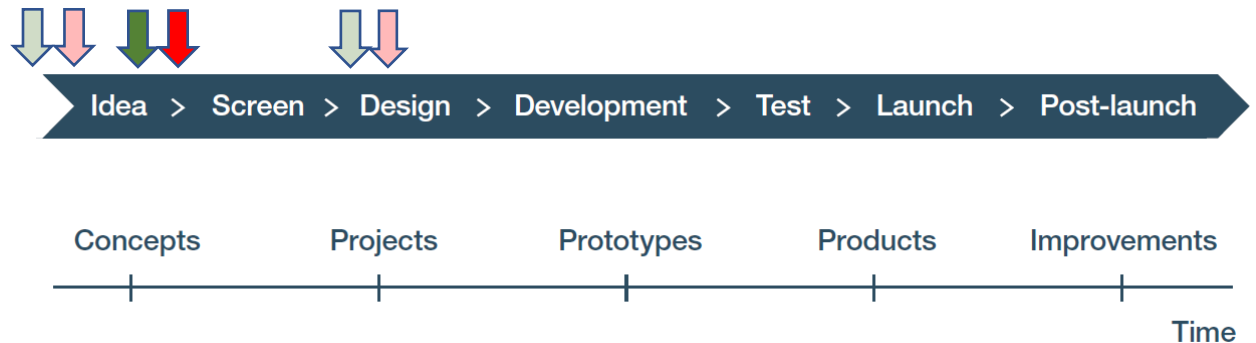


Figure 1: Stages and gates. The green arrow depicts where the Voice of the Customer Tool is most commonly used, early in the Idea stage. The more transparent green arrow indicate it can also be used even earlier to help develop the NPD Project Charter and Action Plan. The green arrows (transparent and non-transparent) indicate when to begin using the tool. The red arrows (transparent and non-transparent) indicate when the tool needs to be completed in order to be used as part of a gate review where a Go/No Go decision is made before moving to the next stage. The transparent arrows in the Design stage indicate that the Tool can also be used early in that stage to hone in on what specifications buyers and end-users will likely want for a good like the one you are developing.

The data for the Voice of the Customer Tool workbook comes from interviewing current customers who are using a similar product or service, potential customers (buyers), potential end-users, and experts on the relevant markets and customer segments for your product or service.

We recommend conducting two kinds of market research to prepare for interviews. The first kind is web searching using search terms like “problem” or “need” or “requirement” and the generic name for the product or service described in the Project Charter. The objective for this web searching is to get a general understanding of the needs and requirements of your potential customers and end-users by understanding the problems and challenges they face when working in areas for which your product or service is relevant. Web searching also helps you learn any jargon the people you interview are likely to use.

The second kind of market research is called a Concierge Test. A Concierge Test requires taking a field trip to visit a few actual users and potential customers of this type of product or service, at their place of work. There is a world of difference between discussing a product or service during a phone call, and actually watching someone work while they explain to you what they are doing. In a Concierge Test, you ask the people you are visiting to show you how they do their job while explaining what they are doing, so you gain insights that help you design a product or service that can provide them a better way of working. This approach is called a Concierge Test because you are acting like a hotel concierge, only this time instead of finding tickets or restaurant, you are finding a product or service that meets the “request” of potential customers and end-users.

You can use the templates for interviewing current and potential customers and end-users that are provided in the Voice of the Customer Tool to help you structure your discussions during a Concierge Test. You can also use these templates to suggest what kinds of data to seek when web searching as part of your market research.

## How do you conduct interviews and enter data in the Voice of the Customer Tool?

To conduct interviews, use semi-structured interviewing. In this social scientific method, the questionnaire is for the interviewer to consult during the interview, but it is not something to be given to the interviewee or read verbatim to them. The questionnaire is there to help you make sure you collect the data you need during your discussion with the interviewee. By structuring the interaction as a discussion, you follow the flow of conversation to explore what is important to them, without losing sight of what you want to make sure you learn. This approach also allows for serendipity, as remarks or observations by the interviewee may open a new line of questioning.

Use the questionnaire as a guide. Feel free to add questions or modify them to better meet your needs. For example, if your preliminary market research uncovered issues that are specific to your product or service, you may want to add questions that are specific to those issues. The critical objective is that you come away with a solid grasp of what core benefits, tangible features, and augmented features are likely to be critical determinants of buying and use behavior for the product or service you are developing.

The questionnaires provided in the Voice of the Customer Tool are designed to help you gain the critical information you need from each source, and they cover positive aspects such as what core benefits, tangible features, augmented features would be desirable, as well as negative aspects such as potential roadblocks, problems, or competitors. Each questionnaire provides a set of questions that you will explore with each interviewee to assess the possibility of a competitive opening for the new product or service you want to develop. Using the appropriate questionnaire for each type of interviewee means that you will seek and gather, as much as possible, the same data from each type of interviewee. That will allow you to compare and analyze the results from these interviews to identify which requirements and issues are more important.

In the workbook we have provided two tabs for interviews with current or potential customers, two tabs for interviews with potential end-users, and two tabs for interviews with experts. There is no hard and fast rule on how many people to interview, so you are free to decide the number of interviews and copy blank tabs to create as many as you need for each type of interviewee. There is also no hard and fast rule on what types of interviewees you should select. For example, some products or services may be purchased and used by the same person, so the potential customer (buyer) and potential end-user are the same person. For other types of products or services, a customer may purchase and then distribute the product or service for others to use. If the potential customer and potential end-user are different, you might want to interview potential customers to get their perspective on making the decision to purchase, and then interview potential end-users to learn their needs and concerns.

One way to improve interviews about your product or service is to use a method known as “fishing” over the series of your interviews. It is called fishing because you use what you learn in one interview as “bait” to get answers in the next one. In the fishing method, after each interview you modify how you ask the questions and steer the discussion to reflect what you have learned in the previous interview(s). At some point you find no further modifications are needed. That is usually when you have the understanding you are seeking. This usually occurs after four to eight interviews.

Be aware that markets are dynamic. Customer and end-user needs and requirements change over time. What respondents say they want at time  $t$  does not mean they will want it at time  $t+1$ . In your discussions with customers, end-users, and experts, you should probe for the factors which could lead to changes from what they are telling you today.

Figure 2 below is from Voice of the Customer Tool workbook for the Biofuels Example and illustrates questions and answers from an interview with an expert in the relevant market and customer segment.

<b>Expert on competitive opening</b>	
<b>Name</b>	ATI
<b>Title</b>	Executive Director
<b>Organization</b>	Crop Farm Bureau
<b>Phone</b>	777-666-555
<b>Email</b>	<a href="mailto:Ati1@farmbureau.country.org">Ati1@farmbureau.country.org</a>
<b>Importance of need(s) being addressed</b>	We are all talking about biofuels in the agriculture sector, but not too much is happening in countries like ours yet. I think we may need stronger government incentives before we see widespread adoption of this kind of technology. The core problem is start-up costs: Who pays for it? Everyone loves the idea of free fuel and being energy independent as well as having another cash product to sell, but right now to a lot of our members it seems like pie in the sky, especially when folks are worrying about drought in one place and too much flooding in another.
<b>Key specifications and features to emphasize for this niche</b>	While the system may work in the lab, it should be demonstrated for field use, where it is harder to be low maintenance and minimal operation because the environmental conditions are different. Sophisticated equipment is limited, especially once you move away from the very large corporate farms. For example, to give you a perspective, some of our mid-sized farm members, and many with small farms, don't even have access to the internet. Also, it should be cost-effective and show efficacy over various types of waste. And it needs to be something a reasonably skilled farm mechanic can operate and repair. I should have started out by saying it has to be affordable in both absolute terms and quick return-on-investment.
<b>How long will end-users expect a product like this to be used before it has to be replaced? If consumables are involved, how often are they purchased and in what lot sizes?</b>	Think of it this way. If I put a fuel tank on my farm, it lasts a couple of decades. So if this product does not last at least that long, it seems off to me. On a lot of farms we have 30 year old trucks and tractors, which is another benchmark for expectations.
<b>Price and pricing factors for this niche – specifically, what price would you expect to pay for such a product?</b>	For sake of argument, lets say I pay a couple of thousand a year for fuel. Then this product, with all the consumables and repairs and maintenance, has to cost less than that per year and it has to cost enough less that the user can see how they can repay the purchase price within their payback period limitations.
<b>Key competitors</b>	Anaerobic biodigesters and compost piles, as well as biofuel producers buying crops or crop waste and taking it off your hands at no cost to you.
<b>How would you introduce a product like this one?</b>	We are always looking for interesting things for our meetings and journals. So think about making a presentation and providing an article. We do give preference to those who sponsor or take out ads. I'd also talk to our Farm Technology Committee and see if they would be interested in doing an evaluation of what you have. There is a fee for that I should mention.
<b>How important are things like delivery, installation, training, warranties, affordable consumables, credit for purchasing and after-sales service for customer satisfaction?</b>	All of these are important. Again it is all a matter of making this affordable and a simple thing to acquire and use.
<b>Potential roadblocks to introduction</b>	First of all there cannot be any regulatory roadblocks due to air or water pollution, or health hazards to people or animals or plants. Second, it has to be a really good deal because you still can compost. Third, you have to prove it will work as advertised because why should someone take the risk involved in adopting it otherwise.
<b>What problems should be anticipated in making customers and end-users aware of this technology and in their acquiring it, using it, maintaining it, disposing or recycling it after its useful life, etc?</b>	Assuming the bugs or chemicals or whatever you use to digest and the by products that are not fuel have no issues associated with them, I don't see many problems. As I said before, we are a venue for making what you are selling known. Many companies sponsor our meetings or take out ads in our journals as well as make presentations and do articles.
<b>Additional insights</b>	I'm sure others have told you to focus on bigger farms first. Other than that I'd suggest working with the national agricultural universities and their demo farms. It's the next generation of farmers who are likely to be more open to innovation, especially if they learned how to work it during their courses.

Figure 2: Example of an expert interview (“Expert interview 2” tab) from the Voice of the Customer Tool workbook for the Biofuels Example.

Here are a few tips for conducting interviews for the Voice of the Customer Tool:

- Whether you are contacting someone by email or phone, it always helps to have a name and a reason for contacting that someone. If you are not sure whom to contact, you can often use web searching to find people you may want to interview. Begin by looking at people in companies and other entities that you think will be relevant for your product.
- If you are stumped, search the web for people who are committee chairs or officers of relevant trade and professional groups, who have given papers at a conference, or written an article. In addition to searching associations and societies, online trade journals are helpful. After you have done this kind of background research on a person, you can contact that person and say that you called because they hold this position or have written this paper.
- If you are calling a company, institution, or government agency and do not know the specific individual you want to talk with, call one of the senior people in management and ask the operator to speak with their secretary or assistant. Explain you are conducting market research and not selling anything. Further explain that you want to talk to someone in order to better understand their needs, so you can design a product or service that is more useful for potential customers like them. The secretary or assistant will likely know who to refer you to.
- Try to keep your conversations brief and somewhat informal. Ideally you should be able to get your answers in no more than ten to fifteen minutes.
- When you contact someone and they say they cannot talk at that time, ask them when a good time would be to recontact them, and then follow-up promptly at that later time. If they say they are the wrong person or don't want to talk to you, then ask who a better person might be to contact. Once they tell you, ask if you can mention they referred you to this other person.
- If you are calling people, always consider when a good time is to call. Usually, early mornings before people get wrapped up in their daily tasks, or mid-afternoon when they are ready for a break from whatever they were doing, work well for a call. However, remember that the actual good time(s) for a call will depend on how respondents arrange their workflow.
- If the interview goes well, always ask if you can recontact them if you have a follow-up question. We will see an example of why we do this in the next paragraph.

At times you will want to know hard numbers, such as the price someone would pay, or the desired value for a measurable requirement such as low power consumption, British Thermal Unit (BTU) content of the fuel, or weight. If the person being interviewed says they have no idea of actual measurements, then probe for a benchmark or alternative way of expressing the value being sought. Note in the expert interview shown in Figure 2 above, when asked about price, this expert had no idea. When probed with a follow-up question about how we might get some idea of what a desirable price would be, the expert indicated farmers need a quick payback period. With this insight we might call back the subject of potential end-user interview 1, who is a farm foreman, and ask him about payback periods. Their response is in Figure 3 below.

<p><b>Price and pricing factors for this niche – specifically, what price would you expect to pay for such a product?</b></p>	<p>No more than a large pick-up truck. If I had to hold off for a year before replacing a truck that pulls a trailer to market, it's worth it. I always figure it is best to replace things a little early to be on the safe side. But I could not squeeze something into my budget if I could not replace that truck too after I planned to, because if it does just drop dead I cannot get the product to market. When you ask about the payback period we like to see for a pickup truck, that depends on how much hay we are growing and how often we take animals to the slaughterhouse. Ideally just two or three years, realistically, in these times of drought, it's more likely a couple more years.</p>
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Figure 3: Response about payback periods in potential end-user interview in the Voice of the Customer Tool workbook for the Biofuels Example (see “End-user interview 1” tab).

Based on combining the information we gained from the expert, and the potential end-user’s answers to our follow-up questions shown above, you might conclude that the payback period for the mini-refinery should ideally be around two to five years in the farm sector. That brings it into line with the payback period of other major equipment purchases. Using the fishing method, we might increase our confidence on the payback period by asking the next farm customer or end-user we interview if a payback period of three to five years seems attractive.





The tab entitled “Design specifications” imports and redisplay the findings from the Customer requirements tab in column B (list of features identified as Customer requirements) on the left side, and column D (computed average importance of each feature in column B) on the right side. Between these columns is column C labelled Specifications. In this column you will enter what metric you will use to measure how well you are meeting the customer requirement. This metric now becomes a primary input for developing the formal design specifications. Figure 5 below shows a completed worksheet for Design specifications based on primary sources, from the Design specifications tab of the Biofuels Example.

Design specifications based on primary sources			
	Customer requirements	Specifications	Importance
Performance	Wide range of waste that can be treated	Moisture content, size, relative mass	2.333333333
	Efficiency of biofuel production	Energy output/energy consumption	2.5
	Flexible production rates	Speed range in hours	1.333333333
	20 to 50 year usable life	Years	2.666666667
	Meets regulations and standards for fuels	Relevant standards, highlighting BTUs, viscosity, and emissions	3
	No adverse environmental or health impacts	Emissions, particle size, organisms must be safe	2.666666667
	Requirement 7		#DIV/0!
Ease of use	Do not require much training	Training time	2.666666667
	Ease of transport	Size of vehicle needed	1.333333333
	Little maintenance and monitoring time required	Labor time per month	2.5
	Customer support	Customer support hours and level or personnel	2.333333333
	Requirement 5		#DIV/0!
	Requirement 6		#DIV/0!
	Requirement 7		#DIV/0!
Price	Purchase price	Currency	2.6
	Operation costs	Cost per month	2.4
	Payback period	Years	3
	Requirement 4		#DIV/0!
	Requirement 5		#DIV/0!
	Requirement 6		#DIV/0!
	Requirement 7		#DIV/0!
Other	Better than competing technologies	Cost per liter of fuel	1.8
	Addressing skepticism of customers	Independent test laboratory results	2.6
	Energy independence	Barrels of imported oil not needed due to one unit running full-time for one year	2.4
	Requirement 4		#DIV/0!
	Requirement 5		#DIV/0!
	Requirement 6		#DIV/0!
	Requirement 7		#DIV/0!

Figure 5: The Design Specifications tab of the Voice of the Customer Tool workbook for the Biofuels Example.

## How do you interpret the data in the Voice of the Customer Tool and use it in your NPD process?

Customer requirements that emerge from your interviews, as well as other market research, should be aligned with the “Product or service being developed” and “Targeted customer segments and why they will use it” sections of the Project Charter. These customer requirements based on primary sources should validate what is said in the Project Charter and provide a starting point for developing more detailed design specifications. If they do not, there is a problem.

In some cases, the feedback from interviews for the Voice of the Customer does not clearly conflict with the product vision in the Project Charter but rather, it redirects your focus to benefits and features that are more important to customers and end-users. In such a case, you have a choice of actions. You can either modify the Project Charter (and the Action Plan) to reflect this refocusing, or you can restart NPD by drafting a new Project Charter and Action Plan. On the other hand, if there is a clear conflict between what you are learning from the Voice of the Customer and the product vision in the Project Charter, then you should probably halt NPD and think about whether it is even worth refocusing this initiative.

Even if NPD is abandoned because of what you learned from the Voice of the Customer, that does not mean the effort was wasted. You can still use what you have learned from the abandoned NPD initiative to start a new NPD initiative using a different product vision which better targets these customers and end-users. Even if you abandon the whole idea of this NPD initiative, if it appears doomed to failure, it is better to end it early when few resources have been spent, rather than later when there will be a much bigger sunk expense.