Prioritizing Customer Needs at spectator events: Obtaining accuracy at a difficult QFD arena

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Abstract

Once customer needs are extracted from customer verbalizations and field observations, it is critical to understand the relevance that each need has to customers. Accurate information must come directly from customers, but sometimes due to the complexity of gemba this information needs to be obtained very quickly. Direct evaluation of needs without tradeoffs is easy to perform, but can lead to serious deviations from reality. On the other hand, comparison-based techniques such as Analytical Hierarchy Process may be impossible to perform effectively at some gemba. An effective solution was devised by the authors while applying QFD for improving services at spectator events.

Mass spectator event is the generic term used for major sporting events, music concerts, festivals and other activities that involve large number of spectators. Applying QFD at mass spectator events of short duration (less than 120 minutes) and high attendance (more than 75% of stadium capacity), is an exciting, but occasionally difficult task because of the limited time for interaction with consumers, short attention span of consumers toward topics not related to the event, and the limited mobility at the arena; therefore, a simple but useful method was devised by the QFD Team in order to obtain the most accurate information possible related to Customer Needs (CN) prioritization when working for the improvement of service quality at spectator events.

Customer Needs (CN) prioritization is critical, since design of products and services with QFD will be driven to fulfill these prioritized needs. However, it is not uncommon that customers say something different of what they really need. Only trough careful investigation the real structure and weight of CN can be visualized.

If the relative weight of a CN is underestimated for the design, products/services from other suppliers may be more attractive for customers, because this need will be better addressed; on the other hand, if it is overestimated, more resources will be needed, increasing the overall cost without increasing the overall value from the customer standpoint. The best product/service will be the one that is perfectly aligned with what customers really need; therefore, competitiveness of our product/service strongly depends in the accurate assessment of this CN weight distribution and prioritization.

Many QFD authors have detailed various methods for comparing customer needs importance. We present them in order of accuracy as well as the reasons that hindered the team from using it:

Needs Direct Evaluation: Customers are asked to evaluate each need within a scale. Most important needs are to be given higher scores (for example 10), while needs with little relevance

are to be given lower scores (for example 1). Generally an average is estimated for each need. Although this method is easy to understand and answer for customers, Sorli and Ruiz [1] report that some customers will score most needs as important because there is no need for tradeoffs. Variations of this method will be using the **median** (it will protect results from extreme values) or the **mode** (it will select the most common score given by customers). Although *gemba* permitted the application of this method, it was discarded by the QFD team for considering it misleading because without tradeoffs, customers would tend to give high value to all needs presented in order to "finish fast" and/or to "obtain more"; therefore it was not considered as an option.

Needs ranking from high to low: Customers are asked to rank a list of needs from higher (the most important) to lowest (the least important). Daetz et al. [2] consider that this method is fairly easy and still slightly more accurate than the previous one, since choice and tradeoff is required from customers. Average rank is calculated afterwards. Nevertheless, they state that this method is difficult when more than 10-12 needs are ranked. It will also demand a lot of continuous concentration from customers, which is difficult to obtain at this gemba; therefore, this option was also discarded by the QFD Team.

$100 Test: Daetz et al. [2] consider this method as more accurate than previous ones but still easy to administer. It proposes asking customers to distribute $100 among needs. Tradeoffs are needed and relative importance can be detected. Initially, this method was tried at a mass spectator event, but spectators were devoting to much time since 14 needs were evaluated; since too much time and continuous attention from customers was demanded, interviewers were experiencing refusals to continue answering as well as incomplete or incorrect responses from spectators.

Analytical Hierarchy Process (AHP): Sorli and Ruiz [1] consider this paired-comparison method as the best choice available for obtaining accurate answers. Nevertheless, this method is still more sophisticated and costly, as stated by Daetz et al. [2]. Terninko [3] proposes that no more that 9 items are compared simultaneously, but the QFD Team did not wanted to break the needs down into more levels.

Having ran out of options and considering spectators as the customer for the interview, a method that could be answered rapidly and without consuming continuous concentration from spectators that provided reasonable accuracy on prioritization of CN was devised and developed by the QFD Team.

1-2-3 Prioritization Method: Plasticized cardboards containing the 14 customer needs that were extracted from the Voice of Customer (VOC) randomly ordered were prepared. Letter font was large to facilitate lecture and the needs were expressed briefly but with enough detail in order to allow spectators to understand easily every need. Spectators were asked to identify the single most important need from the list. They needed to read all the list, but since only one was been ranked, they did so rather easily. Spectators were then asked to select the 2 "second places". Finally, 3 "third places" were selected. Occasionally someone repeated a need already selected, but interviewers prevented that mistake on the point. Interviewers reported that the first need choice was usually the fastest, and that "third places" sometimes took more time, the QFD Team considers that this is partly because lower level needs are more difficult to discern than higher

level needs and partly because as time passed their attention wore off; nevertheless the answering process was clearly understood by spectators and no complaints were reported.

After the needs were rated by the spectators, first places were assigned a 5 score, second places a 3 score and third places a 1 score by the QFD Team. This was done in order to add results, where higher scores means better. After scores for each need where added, a relative importance was calculated, in order to identify the relative importance that each need had to the customers (see Table 1).

Table 1: The 1-2-3 Prioritization Method General Table

	Customer 1 Places Choice	Customer 2 Places Choice	Customer 3 Places Choice	NEED Grade	NEED Relative Important
Fast Service	2	3	2	3+1+3=7	7/42=17%
Ice Cold Beer	1	2	1	5+3+5=13	13/42=31%
NEED 3	3	2	3	1+3+1=5	5/42=12%
NEED 4	3		3	1+1=2	2/42=5%
Accessible Price	2	1	2	3+5+3=11	11/42=26%
NEED 6	3	3	3	1+1+1=3	3/42=7%
NEED 7		3		1=1	1/42=2%
TOTAL				**42**	**100%**

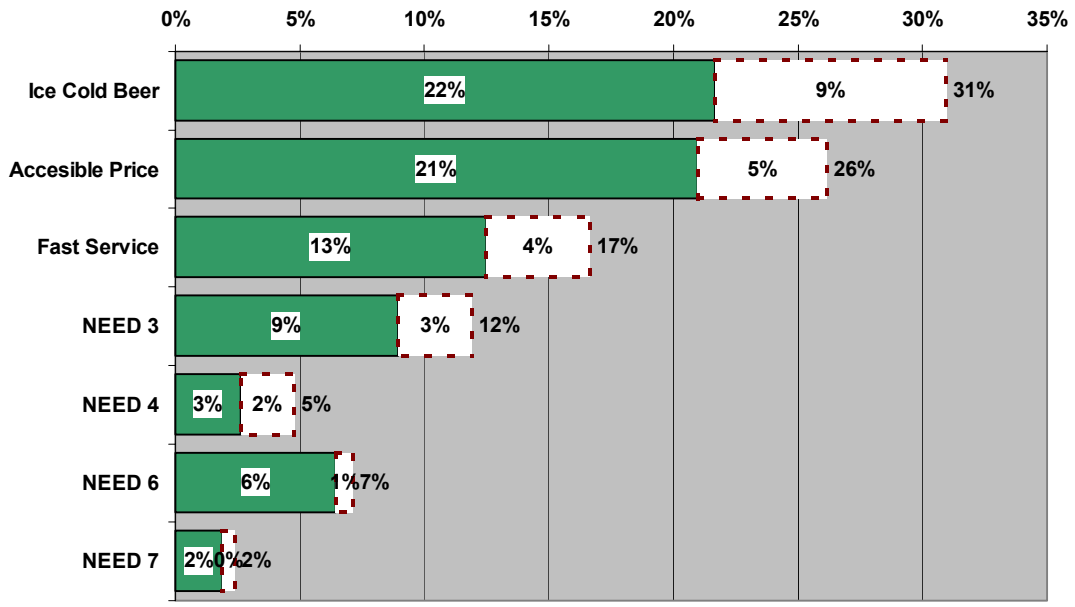
The 1-2-3 Prioritization Method selects 1 number 1 need, 2 number 2 needs and 3 number 3 needs.

Although the QFD Team recognized that this method could not provide the same level of accuracy as the one provided by AHP, the team considered that the accuracy obtained was equivalent as the one that can be obtained using the $100 Test. The QFD Team was able to prove the consistency of both methods by comparing the obtained results with the ones from the few $100 Tests that were successfully developed at the same event. On the other hand, the qualitative impression of the interviewers and the rest of the QFD Team was that the results were consistent both with the observations and with the comments of the spectators.

With this new method, the QFD Team was able to efficiently conduct a high number of interviews, in order to have a statistically significant number of them, enabling the team to estimate the relative weight (importance) that the 14 needs had to chosen customers. We also requested the customers to evaluate how well we were doing at each one of the most important CN's.

The result was a final chart in which the QFD Team was able to assess the CN's weight structure, the evaluation of customers for each score, and the opportunity area. In the table in Table 2 (partial; results modified in order to protect results confidentiality) we can identify that the first CN accounted for 25% of the Total Need, and while it was evaluated with an 80% of accomplishment, it represented the largest opportunity area for improvement (5%). The second CN accounted for the 10% of the Total Need, an even though it was evaluated with only a 60% accomplishment, it represented just a 4% opportunity area for improvement.

Table 2: Customer Needs and Scores



This figure represents the CN and the accomplishment to each need. An improvement in CN 1 will represent a higher payback to the total CN Model.

An accurate understanding of the customer needs is crucial for the successful development of a QFD project. Therefore, we believe that this efficient method can be used when more accurate methods (AHP) are not an option. The information obtained by using it, provided the QFD Team a useful and focalized frame for decision making towards service processes quality improvement, that hopefully will translate into "spectacular results" once the proposed strategies implementation is finished.

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