

TQM and QFD: Exploiting a Customer Complaint Management System

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1. Introduction

One decade ago, even before the “Internet Boom”, Zeithaml et al. [1] published that “executives ranked the improvement of service as the single most critical challenge facing U.S. business”, in spite that services accounted for approximately $\frac{3}{4}$ of the U.S. GNP, and 90% of the new jobs the economy created. This transition towards a service economy has represented a global trend and a major competitive issue. Nevertheless, service worldwide does not appear to have improved as customers require. Furthermore, in many service industries, customer complaints are the same ones than ten years ago.

Deming [2] believed that failure in service and therefore complaints, are inevitable due to the number of variables and perceptions involved in service transactions. He also showed us with his Deming Cycle, that feedback and learning from mistakes were both key ingredients for achieving true TQM and sustained profitability. How do we explain the incongruity that service excellence pays off and yet it is such short supply [1]? If service companies frequently get information from the customer of what is going wrong, why so many of them are not changing fast enough?

Complaints are expensive, both in direct and indirect costs. But for this price, companies can extract priceless knowledge, because complaints contain the direct voice of the customer. One of the main steps of QFD is going to the gemba. This confirmation at the place where actions for the customer are taking place, has given QFD system a lot of power. Therefore, gemba visits shall be carefully planned to obtain “the real” voice of the customer. But when a complaint arises, there has been such a large gap between expected and perceived basic needs, that gemba has taken the initiative by reaching the company to make sure that its voice is completely understood!

If complaints are transformed into knowledge about customers, they can provide a valuable amount of capital for enterprises [3]. To exploit this capital, companies must design, build, operate and continuously upgrade systems for managing complaints. These systems are called Customer Complaint Management Systems (CCMS).

Considering the value that customer complaints have, we shall expect that robust CCMS were being used successfully at many service companies. However, Tax et al. [4] state that in general, firms are not well informed on how to deal neither with service failures nor of the impact of CCMS.

Berry [5] describes that there are three principal causes that hinders the CCMS proliferation: (1) CCMS costs are visible and immediate while their benefits are long termed and indirect, (2) managers doubt about customer honesty when voicing a complaint and (3) many unsatisfied customers do not complain (up to $\frac{2}{3}$, according to Stephens and Gwinner [6], do not complain). We shall add that in many organizational cultures, a complaint stands for failure and blame.

2. Customer Complaint Management System Model

Although important research has been conducted around CCMS, most models are not comprehensive enough and understate the importance of some steps that practice with TQM methodologies has demonstrated. Therefore, a model for CCMS that integrates practice-tested methodologies as QFD, Problem Solving and FMEA was developed.

The 7 steps of the CCMS Model, based in Deming Cycle, are all related to a TQM methodology (either QFD, FMEA or 8D's). These steps are (1) Document Voice of Customer [VOC], (2) Translate VOC into Customer Needs and Problems, (3) Analyze and Solve the Problem, (4) Exploit Customer Needs, (5) Update FMEA to avoid recurrence, (6) Share solutions with affected customer and (7) Update system performance measurements (Figure 1).

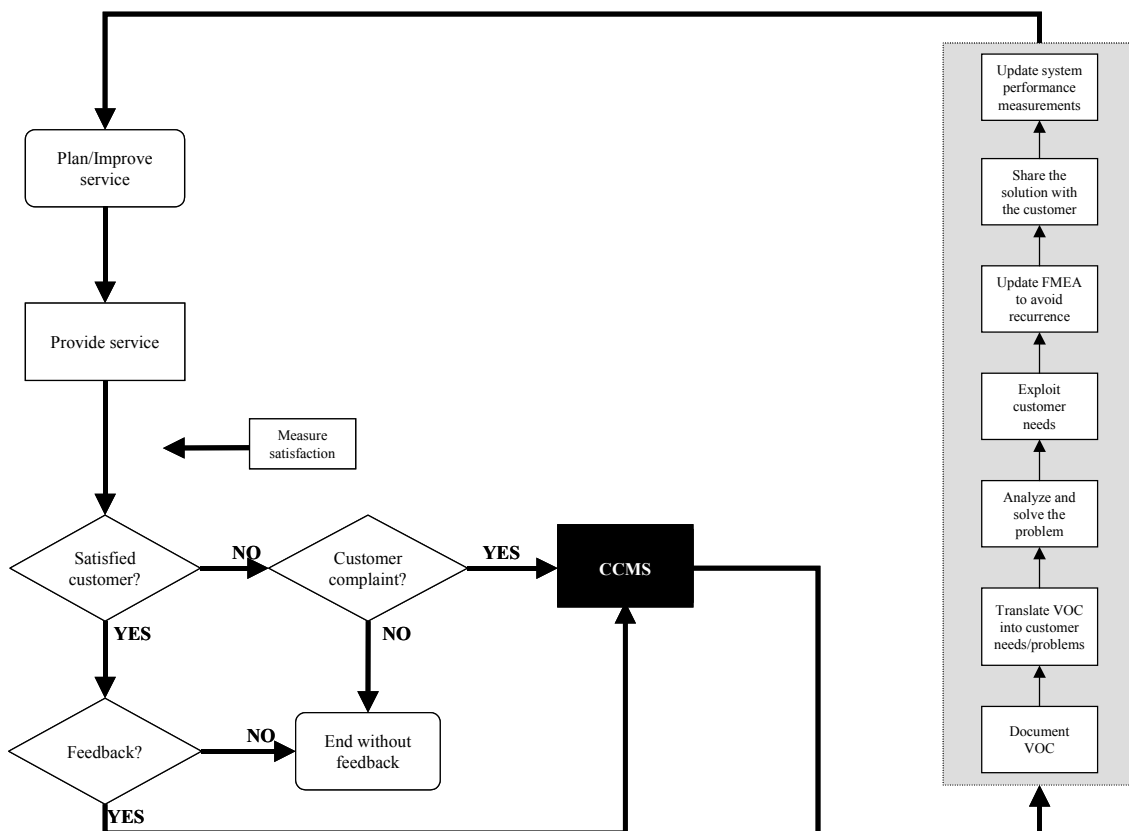


Figure 1. CCMS Model

Three important indicators for measuring the CCMS success are proposed: (1) Time to respond to a customer complaint, from receiving it to giving an answer to the affected customer, (2) percentage of closed cases out of complaints received, and (3) evaluation of service level. Although service level is affected by many variables other than CCMS, it can provide a reference of the general improvement status of the company through its service strategies.

3. Implementation Case: Latin Air

In order to provide an example of the application, possibilities and limitations of our proposed CCMS Model, we present a project developed for a major Latin American transportation company. In order to keep the confidentiality about the information of this company, we will refer to it as "LatinAir" from now on. Numbers, figures, dates and exact verbalizations have also been slightly modified for the same purpose.

With the intention of making this process easier to understand for LatinAir personnel, we developed an Excel document with 5 linked worksheets. Worksheet 1 includes Voice and Needs of the

Customer, as well as the Problem Definition and its Causes. Worksheet 2 is an FMEA format. Worksheet 3 is a matrix that relates Customer Needs with Processes. Worksheet 4 is an automatically generated apologize letter for the customer. Finally, Worksheet 5 is a diagram that shows needs not being satisfied. These worksheets simplified a lot the work to do and served as a useful validation tool, but they also allowed LatinAir personnel to easily modify and adopt the tool to their needs and language, as they mastered the process.

3.1 Document Voice of Customer [VOC]

The first step was to document the VOC into the worksheet. Although there is a format to document complaints at LatinAir, every complaint was managed as a single issue. In a complaint, there may be more than one useful verbalization, so we divided each complaint in all the verbalizations to be analyzed (Table 1).

Table 1: Voice of Customer Example (partial view of Worksheet 1)

Complaint Number	Flight	Route	Voice of Customer (Verbalizations)
10.1	44	A - C	"At the counter, we were informed that we would be boarding at Gate2. After a while, we noticed a lot of movement in Gate 3... Gate 3 was the correct boarding gate, not Gate 2..."
10.2	44	A - C	"...the agent rudely commented to us that we were not eligible for hotel and dinner as the rest of the passengers, because we had arrived late (because of the boarding gate issue)..."

3.2 Translate VOC into Customer Needs and Problems

For each verbalization, LatinAir personnel identified the Customer Need behind the verbalizations. For some verbalizations, more than one Customer Need was identified. As a reference, we wrote each Customer Need to complete the sentence "**I need to...**"(Table 2). With our guidance, they also defined clearly the problem which caused the Customer Need not to be satisfied (Table 3).

Table 2: Customer Need Example (partial view of Worksheet 1)

Complaint Number	Need (I need to...)
10.2	...receive a friendly and respectful service.

Table 3: Problem Definition Example (partial view of Worksheet 1)

Complaint Number	What is the problem?					
	Identity (what: object) noun	Identity (what: defect) negative adjective	Where	Time (when)	Magnitude (how much)	Magnitude (concept)
10.2	service response	mistaken	boarding gate	Mar-15-01	8	passengers

Using the CONCATENATE Function of Excel, the problem was described as "**8 passengers with service response mistaken at boarding gate on Mar-15-01**".

3.3 Analyze and Solve the Problem

After defining the problem, affected processes and problem causes were analyzed (Table 4). Previously, causes were not completely validated, so there were no real solutions, only contingency and non-permanent countermeasures. When looking up for root causes, LatinAir executives found out very useful information about their systems. This strongly motivated their interest in participating actively in this learning process, providing both, ideas and resources.

Table 4: Process Affected and Causes Analysis (partial view of Worksheet 1)

Complaint Number	Cause of Process Failure	Affected Process
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10.2	Protocol rules for answering passengers were not followed	Passenger service
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3.4 Exploit Customer Needs

Exploiting Customer Needs means maximizing its value to the company. Complaints are a first-rate source for identifying Kano's [7] Expected and Basic Requirements (Customer Needs) to be satisfied. Exciting Requirements can be extracted from congratulations and positive comments. There was not a prioritized list of Customer Needs at LatinAir. In this project, a basic list of Customer Needs, as well as the number of times they were not met, was prepared (Figure 2). This will allow LatinAir to continue focalizing its efforts on these needs, and as a reference point for subsequent Comprehensive QFD projects to be developed.

Customer Need	Number of reported times need was not satisfied	0	5	10	15	20
Receive a friendly and respectful service	15					
Get all the services I paid for with my ticket	14					
Trouble-free connections	5					
Confidence that requested services will be effectively carried on	4					
Have a secure service when buying tickets	4					

Figure 2. Example of some Critical Customer Needs (partial view of Worksheet 5)

A matrix was developed (Figure 3) to identify which processes were related with Customer Needs. This allowed LatinAir to identify interesting patterns and processes that needed to be redesigned or drastically improved.

Needs vs. Processes	Passenger service	Tickets purchasing	Boarding
Receive a friendly and respectful service	15		
Get all the services I paid for with my ticket	7		7
Guarantee that there will not be problems with the flight connections		5	
Confidence that requested services will be effectively carried on		9	

Figure 3. Matrix of Customer Needs vs. Processes (partial view of Worksheet 3)

3.5 Update FMEA to avoid recurrence

There was not a Service FMEA at LatinAir. With the documentation of the first group of complaints, an initial FMEA was developed (Table 5). This FMEA has been serving as a basis for detecting failure modes and developing an initial preventive system. Many more preventive actions were later on added to this FMEA.

Table 5: FMEA (partial view of Worksheet 2)

Complaint Number	Process Description What is done?	Potential Failure Mode How it fails?	Potential failure effect Consequence (need not satisfied)
10.2	Passenger service	service response mistaken	receive a friendly and respectful service

Causes of Potential Failure Why it failed?	PRN	Recommended Actions What to do to prevent failure?	Responsible
Protocol rules for answering passengers were not followed	125	Review every day protocol and their importance rules with all service personnel, to avoid lack of observance	J.Smith, Manager, Email- jsmith@latinair.com

3.6 Share solutions with affected customer

When a customer has a problem with a company, but this problem is properly managed, it is highly probable that the customer will remain loyal to the company. Moreover, it is also very likely that he will comment with others about the excellence in the response [8]. Customers like to be listened and considered, because these makes them feel respected and important. Therefore, it is essential to share with the customer, as soon as it is possible, a sincere apologize and the answer to his complaint.

Our Excel document automatically generates an “apologize letter” which includes the identified need, the problem that was defined, its causes, the corrective and preventive actions to be taken, as well as the e-mail of the employee responsible of the implementation. We included this letter as a validation for the analysis done, because it should sound coherent when all of the elements are put together. LatinAir is using these letters as a reference for answering to their customers.

3.7 Update system performance measurements

When the process is finished, two metrics should be updated at LatinAir: Percentage of customer complaints closed and total closing time. In this project, we found out that an effective closing process for complaints is a key element for achieving a high percentage of closed cases. Therefore, closing time is a critical variable to be controlled.

4. Conclusion

Excellent service is a genuine key for a better future, for both, customers and suppliers [1]. But this can only be achieved with a profound knowledge of customer evolving needs. Functional CCMS Models should be implemented in every company, regardless of its size, structure or products.

QFD, FMEA and Problem Solving techniques are very useful. But what we found out is that the fundamental element for developing a CCMS is the spirit of improving towards total customer satisfaction. To develop this spirit, Top Management’s leadership will make the difference.

At LatinAir, the process of answering a complaint has transformed from a trivial activity to an exciting learning experience. Complaints are not longer seen as a source of blame, but as a unique learning opportunity. There is a renovated spirit of continuous improvement towards service excellence. Procedures, Service Rules and training in TQM and QFD tools and systems are being developed.

Before the implementation of the CCMS at LatinAir, the average total closing time for answering a complaint normally took weeks. Now it is only a matter of days. The percentage of closed cases has increased as well.

Although the enthusiasm at LatinAir is contagious, there is still much work to do. But their organisational culture has evolved. You can hear them say that they want to be the best customer-service team in their market, and they mean it. Surely they will succeed. You can tell it from the smiles in their faces and from the pride and energy their leaders are deploying through their example and actions.

5. References

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