

Adding requirements on customers to current quality models to improve quality - development of a customer - vendor interaction

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Conceptual paper

Summary

In most descriptions of business development and models for Corporate Governance, contacts between supplier and customer are for the most part focused on the supplier's responsibility to identify and document customer requirements in order to enable the organization to meet customer requirements (stated and unstated). In the actual contact between customer and supplier it has been observed in several cases that there are aspects of the interaction not described in traditional theoretical quality models. What seems to be missing is a more explicit requirement for customers and for customers' actions. The logic is that a qualified customer performing based on supplier instructions will result in a better performing product. The apparent lack of theoretical models describing this aspect indicates that this is an interesting area for research and development

The purpose of this paper is to highlight a seemingly "forgotten" area within quality management, which is the lack of requirements put on customers in quality models. The first objective is to review existing quality models to explore the extent of requirement on customers included. The second objective is to propose additions to current models that include requirements placed on customers.

A limited review of the award criteria and the most common models for quality and improvement techniques shows that there is no explicit and documented way to set requirements for customers. Our interpretation is that EFQM is the model closest to our description of "demands on customer" due to their clauses connected to "partnership".

The ISO/DIS 26000 is moving the requirements further against the customer for the social responsibility than the quality standards are doing.

Further research could focus on how requirements on customer will affect the performance of the entire supply chain both from a quality and social point of view.

Problem description

One of the leadership principles in ISO 9000 is mutually beneficial relationships between suppliers, partners and other interested parties and to enhance customer satisfaction by meeting customer requirements. Typical examples of this are when customers opt for working with only a few suppliers and offer them long range co-operation in exchange for higher

quality requirements. The customer's right to define what is needed is a core issue for quality and quality management.

The concept of the customer being the king is strong. This concept could be seen to be in conflict with general acceptance of democracy and the TQM core value of "let everybody be committed". Should customers really be kings and is it reasonable to believe that they know what is going to be the best for the overall performance? In most cases customers in their turn deliver to the next customer and become suppliers for the next king. From a supply chain perspective having a number of local despots could indicate that there is a risk for sub-optimisation. The modern customer king could maybe be seen as a constitutional monarch who has to comply with a number of rules as everybody else.

However looking at Quality definitions we can note that customer needs are not the only requirement (Bergman & Klefsjö, 2003).

"The degree to which a set of inherent characteristics fulfils the requirement, e.g. needs or expectations that are stated, generally implied or obligatory" *ISO 9000:2000*. – Requirements can be set by other interested parties.

"The lack of quality is the losses a product imparts to the society from the time the product is shipped" *Genichi Taguchi*. - Focus is to be making best use of resources.

"Conformance to requirements" *Philip Cosby*. – Requirements can be set by other interested parties.

"Quality is a state in which value entitlement is realized for the customer and provider in every aspect of the business relationship" *Mike Harry, Six Sigma Academy*.

"Quality should be aimed at the needs of the customer, present and future" *Edwards Deming*.

"Fitness for use" *Joseph Juran*.

"...there are two common aspects of quality. One of these has to do with the consideration of the quality of a thing as an objective reality independent of the existence of man. The other has to do with what we think, feel or sense as a result of the objective reality. In other words, there is a subjective side of quality." *Walter Shewhart*.

"The quality of a product is its ability to satisfy, or preferably exceed, the needs and expectations of the customers." *Bergman & Klefsjö*.

A quick review of quality definitions reveals that focus is on best performance by looking customer needs, but also other stakeholder needs. There is little support for the "customer is king" mental model.

In contemporary life we have several examples of requirements on customers. The restaurant could be requiring a certain dress code; schools recruiting pupils demand a certain proven level and banks look at our paying capability before we can have a credit card. The logic is simple, for achieving the best overall performance; customers have to comply with a set of requirements.

In quality literature the issue of “requirements on customers” seems to be largely missing.

Methodology

Process theory with special focus on communication and information flow was used to describe the role of customer requirements. Known cases where requirements on customers are applied have been charted using basic process models. The results have been analysed and a general process based model for including requirements on customers is proposed.

A literature survey was carried out with the purpose to assess to what extent requirements on customers form a part of Quality Management theory.

The excellence models SIQ (2010), EFQM (2010) and MNQA (2010) were reviewed for mentions on requirements on customers. Additionally the Six Sigma program, Lean Management and ISO 9001 and 9004 were reviewed, (ISO 9001:2008), (ISO 9004:2009). As an example of TQM, Quality from Customer Needs to Customer Satisfaction by Bergman and Klefsjö (2003) was used. Additionally Service Management and Marketing by Grönroos (2008) was reviewed.

Interpretation of requirements on customers

In the traditional production of goods and services, communication with the customer could be seen as consisting of two types. The first type is before delivery when the customer communicates requirements and the second type is feedback after product delivery. First, what the product is and how the supplier should deliver it. This communication could take place both at the start of production and during production. The second type of communication is when the provider asks the customer for customer comments. This communication usually takes place after completion of delivery but it can also occur throughout the process. This type of communication is well within current quality management theory based on customer focus. The customer’s voice is listened to before, during and after product delivery.

In cases when the supplier has clear requirements on the client the process has a third type of communication. This occurs at the start of the process as well as periodically during the implementation process. The requirements on the client are communicated and if the customer fulfils the requirements, an agreement is achieved. After a while the supplier will evaluate if the customer has fulfilled their commitments in order to qualify to continue as customers.

This can be done in the same way as supplier audits are conducted, see Figures 1 and 2.

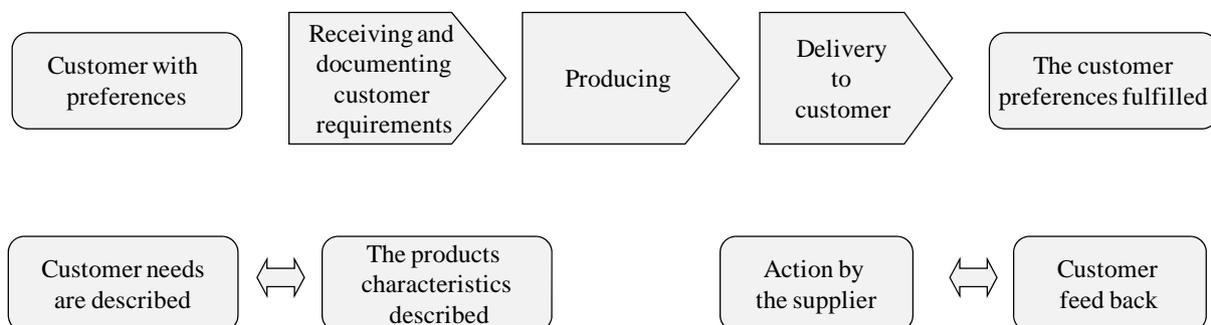


Figure 1 Example of traditional process with common information exchange.

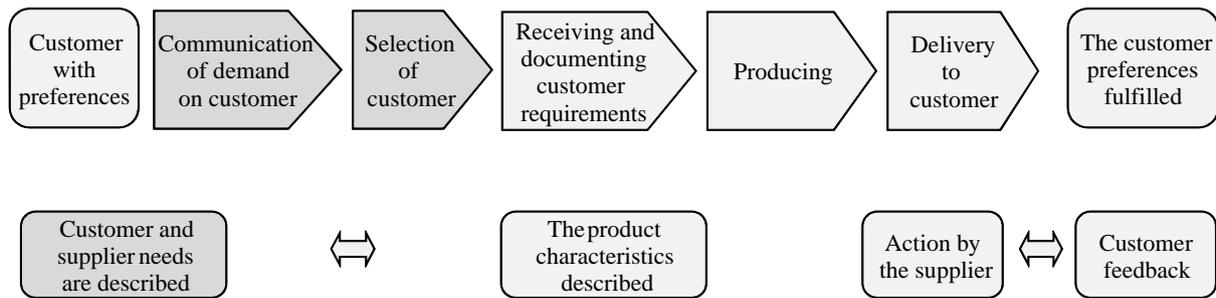


Figure 2 Suggested process supplemented with selection of customer

Literature search

A literature survey was carried out with the purpose to assess to what extent requirements on customers form part of Quality Management theory. The data bases used were Wiley Inter science, Science direct and JSTOR. These data bases are assessed to be sufficient to present an indication of how the studied topic is dealt with. The search word used was "demand on customer" in combination with "quality". Other combination were "customer and partnership", "requirements on customers" and "customer cooperation".

None of the searches gave any results.

Assumption of reality

Several market participants have recognized that the misuse of their products gives dissatisfaction among customers. For some products the society has identified that the misuse is dangerous to the user and / or environment and, therefore, imposed restrictions and / or competency requirements before use. This leads to the following assumptions:

Product quality will increase if the client's competence to use the product is higher.

Selection of customers

There are numerous reasons why we make the selection of customers, final quality is one reason. The following sections present a simple model for the classification of customers with some typical examples.

Financial	Legal requirements	Market	Quality	Social responsibility
Paying capability	Alcohol	Image	Selection of pupils	The use of the product
Uses the supplier's facilities	Tobacco	Geographical	Selection of patients	
	Pharmaceuticals		Selection customers using the product right	
	Weapons			

Table I. *Examples of areas in society where we have requirements on customers.*

Typical examples: Construction companies will increase quality by certified clients

The building materials industry has during a long time seen the problem that the industrially-produced materials do not achieve expected quality because they are incorrectly used. Generally you can divide the errors into two main groups. Wrong product has been selected for an application and that the right product is chosen, but used (applied) in the wrong way. To correct these errors there is a need for the customers to have better knowledge (customers are construction companies and craftsmen who use the product).

Trade associations of builders and craftsmen have attempted to solve these problems through education of their members. However, this has not been particularly effective, presumably due to some lack of interest. This could be due to the fact that end users have been able to claim compensation from building material producers despite the fact that the root cause of the error has been application.

To reduce this problem the building material manufacturer Company A has developed a system for "certified contractors." The main components of the system is

1. Training of Contractors
The purpose of the training is to assure that the contractor acquires sufficient competence in order to be able to correctly use the product before being certified.
2. Agreement between the building materials manufacturer and contractor containing their commitment. E.g. Contractor shall comply with the requirements for measuring and monitoring the use of the product, deviation, etc. The contractor may use the templates supplied by the building materials manufacturer or templates that exist in their own management system.
3. Audits of contractors and building material manufacturers. "In order to develop and improve the cooperation and to secure a system towards the end customer, the Parties agree to continuously perform revisions/follow-ups of the Agreement. The revisions aim to identify shortcomings and areas of improvements with the Customer as well as with the Producer. The shortcomings and areas of improvement, which are noted, shall be presented in a deviation report. The Producer shall present a summary of the revisions at the network meetings".
4. Regular development / planning discussions between contractors and building material suppliers concerning quality, market activities and how follow-up should be done in the forthcoming period.

This certification program has resulted in:

- Reduced complaints on the building material manufacturer
- Increased market share for the contractors and craftsmen who are "certified contractors"
- Improvements initiated by the audits
- Better and more structured communication between the supplier and customer

The system was introduced in seven countries with some variations depending on the local tradition of contractors and craftsmen. All countries reported positive effects.

Results of the review of the award models, quality models, etc.

Swedish Quality Award (SIQ)

SIQ deals with customer expectation in clause 7. 1, interaction with the customer is addressed in clause 7.2. Collaboration, where there is a question of "how you interact with customers? Consider also, in particular, how you involve customers in your processes." Regarding quality, this is the nearest to a requirement of its customers. For environmental requirements, there is in section 1.5 Environmental Management section C "how you interact with customers, suppliers, partners and other organizations to protect the external environment". According to SIQ (2010) we must therefore involve our customers in our processes and for the external environment interact with our customers.

The Malcolm Baldrige National Quality Award

Chapter 3 describes how the MBNQA is taking in customer focus in its evaluation of the organizations. "Describe how your organization determines product offerings and mechanisms to support customers' use of your products. Describe also how your organization builds a customer-focused culture". Further in the text, we can see that the requirements of customers extend to an alliance. The focus is however clearly to support. "What are your key means of customer support?". "How do you build and manage relationships with customers to increase their engagement with you?". "Customer relationship building might include the development of partnerships or alliances with customers".

EFQM

In the introduction to EFQM, we find the section "Building Partnership" and in EFQM there are also customers' potential "partners". Work with partners aimed at joint success (mutual success).

Several criteria in the model (1c, 1 d, 4a, 5a, 5b and 5e) are dealing with the subject of working with partners and customers. There is no specification of the meaning with this collaboration with partners but in clause 5e "collaboration with customers" it's at the level of advice "Advise Customers on the Responsible Use of Products and Services".

Quality and management models as SIX Sigma, Lean, etc.

The most common quality models are highly focused on meeting customers' stated (basic needs), unspoken and implied requirements. Most clearly presented in the model Kano described. In Lean the "value for the customer" is very clear, but it is not described if you can choose a customer or specify requirements on the customer in the form of an agreement (in addition to financial obligations). A special case is when our product is a service and it is produced by or with the customer. These products require that the relationship between customer and supplier are clear and that there are rules to be followed by both parties. In the models presented by Grönroos (2008) and the GAP model (Zeithaml & al 1990) the purpose is explain where and why the customer is not satisfied. Still, it is the customer's requirements that have the strongest focus.

ISO 9001 and ISO 9004

ISO 9001 and ISO 9004 is clear process and customer-focused with a few sections related to customer relationship. In ISO 9001 Section 5.2 Customer Focus is it written "Top management shall ensure that customer requirements are determined and are met with the aim of enhancing customer satisfaction (see 7.2.1 and 8.2.1)." In section 7.2.1, shall the requirements that the organization makes on the product be set. It is requirements on the product and not on the customer. In ISO 9004 the customer focus is further described as one of the eight Quality Management Principles. The conclusion is that it is the customer's needs and anticipated needs that are to be understood and that there should be a systematic way of working with customer relations. The satisfaction of customers and other stakeholders should take place in a balanced manner.

Synthesis of different Models

An attempt to make a graphical presentation of the various models' placement on a line between "customer and suppliers needs are described" and "only customer needs are described" is shown in figure 3.

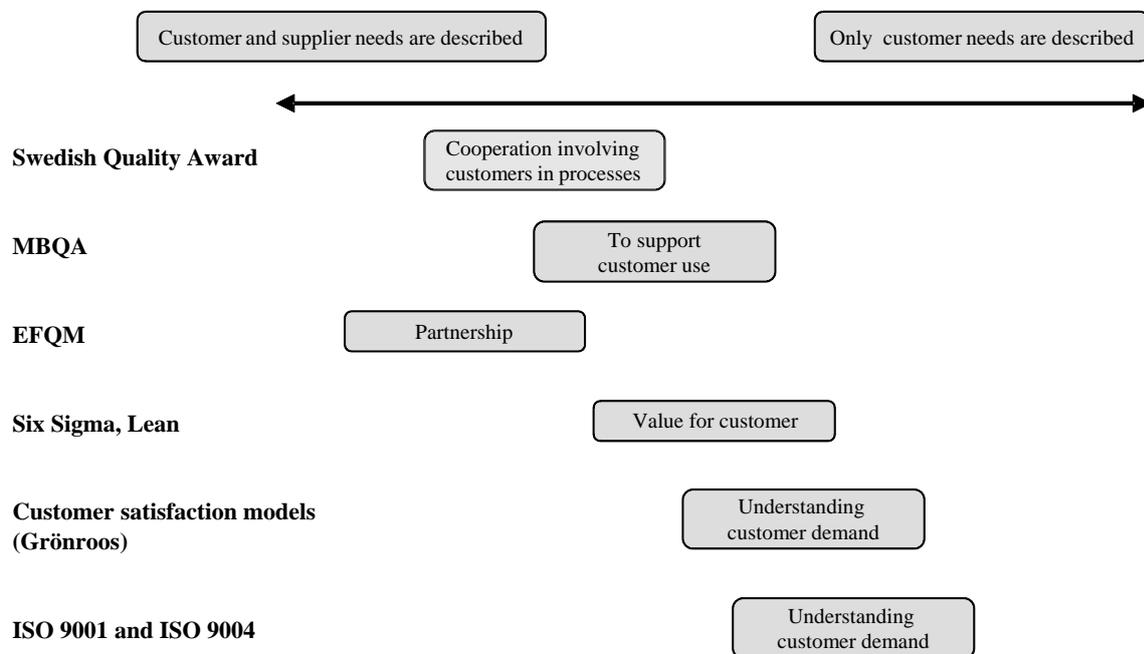


Figure 3 Presentations of quality models and quality standards interaction with customer.

Social responsibility

In chapter 6.7.6.1 ISO/DIS 26000 it is stated "Providers of products and service can increase consumer satisfaction and reduce levels of complaints by offering high quality products and services. They should provide clear advice to consumers on appropriate use and on recourse or remedies for faulty performance. They can also monitor the effectiveness of their after-sales service, support and dispute resolution procedures by surveys of their users."

The ISO/DIS 26000 is moving the requirements further towards the customer for the social responsibility, more than the quality standards are doing. In the chapter 7.1 ISO/DIS 26000 some general statements of implementing the standard is made "Previous clauses of this International Standard have identified the principles, core subjects and issues of social responsibility. This clause provides guidance on putting social responsibility into practice in

an organization. In most cases, organizations can build on existing system, policies, structures and networks of the organization to put social responsibility into practice, although some activities are likely to be conducted in new ways, or consideration for a broader range of factors.” An interesting question is if demand on customer is a “new way”?

Conclusions and discussion

Our review of the award criteria and the most common models for quality and improvement techniques shows that there is no explicit and documented way to set requirements for customers. Our interpretation is that EFQM is the model closest to our description of “demands on customer” due to their clauses connected to “partnership”.

A limited analysis of situations in society where there are requirement for the client shows that it is not unusual. Experience from work with customer interaction and work with common development of cooperation between supplier and customer shows that there is an untapped potential for improvement.

If we put the two extremes against each other with the one extreme being "The customer always knows best and we do what the client says" against "we know best and the customer must do as we say" we see that both extremes have deficiencies. We should most likely be closer to the view of “customer knows best” as indicated by quality management methodologies. However, there are cases where the entire performance can benefit from using a more sophisticated approach which permits the supplier to contribute. As in all partnerships and situations where several players must work together we believe that an equal power relationship is beneficial. Too strong suppliers tend to provide customers with low quality at high cost (monopoly or oligopoly position). Strong customers can push their suppliers to exorbitant contracts and agreements. The best is if there can be focus on maximal customer value in the entire supply chain for lowest possible cost.

How will focus on Corporate Social Responsibility affect the position for the customer as king? We believe that the producer will have same responsibility and liability for the customer’s use of the products as they have for the supplier to their production.

Further research could focus on how requirements on customers will affect the performance of the entire supply chain both from quality aspect and from a CSR point of view.

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