

# Developing customer feedback process in the construction supply chain

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## Summary

Customer feedback provides valuable information to companies and supports their effort to improve quality. In a competitive market, companies should use multiple tools to make the voice of the customer heard inside the organisation. In construction, the extent of customer satisfaction is only known late in the project when most of the customer's money has already been spent. The development of multiple customer feedback tools allows problems to be identified early on, before conflicts develop. A natural response to this is to create a feedback system, which takes into account the customer's perceptions of the contractor's performance during the project and after the completion of the facility. This paper concentrates on developing common satisfaction measurement tools and procedures in connection with the construction process. The purpose of the study is to evaluate the existing Finnish construction feedback system and to explore how the customer feedback system can be further developed to answer to the needs of the construction supply chain.

**Keywords:** Customer relationship management, customer feedback, supply chain management

## INTRODUCTION

In a competitive market, it is crucial to know how satisfied or dissatisfied your customers are. Customer satisfaction and value can be seen either as a goal or as a measurement tool in the development of the quality of the construction process. Increasingly, construction companies have adopted customer satisfaction as a one of the success factors of a project (e.g. Maloney 2002; Yasamis 2002; Chan and Chan 2004; Sanvido et al. 1992). Companies should use multiple tools to measure customer satisfaction in developing and monitoring products/services in order to manage and improve customer relationships and quality (Garvin 2001). Customer satisfaction enables construction companies to differentiate themselves from their competitors and gain sustainable advantages. Measuring customer satisfaction is also important for organisations, for example, in improving communication between parties, enabling mutual agreement, evaluating progress towards the goal, and monitoring results and changes. It is also one essential attribute of TQM, which construction firms are adopting in their quality improvement efforts (see e.g. Lahndt 1999; Burati et al. 1992).

The construction of customer satisfaction has been defined in the service quality management literature. Essentially, construction is a service industry, in which case it is important to collect feedback from the customers and other interest groups. However, so far, customer satisfaction in the construction industry has been under-researched. For example, Torbica & Stroh (2001) emphasise that the use of “soft” performance criteria, such as customer satisfaction, is at an early evolutionary stage. Winch and associates (1998) argue that the problem with the existing literature is that does not concentrate on providing value for the customer: “What is required is an orientation towards delivering client satisfaction, not allocating liability once the client is dissatisfied”.

Typically, construction companies make customer surveys separately and their quality and exploitation is underdeveloped. In addition, the utilization of the information has been found to be sporadic and ineffective. Customer feedback is also mainly collected only late in the project when most of the customer’s money has already been spent, in which case the feedback that has been collected has no effect on operational procedures during the project. Thus, the creation of a common satisfaction measurement tool and procedure is important in construction where project organization and collaborative relationships often are of a ‘one-off’ nature.

The complex nature of the construction process, changes in project organisation, the uniqueness of each project and project parties’ different objectives make it difficult to exploit past experiences and customer feedback in future projects. These fundamental characteristics of construction projects also complicate the evaluation of the project outcome.

This paper examines customer feedback as a measurement tool to achieve customer satisfaction and project success. The fundamental objective of this paper is to explore the demands, features and benefits of a feedback system for the construction supply chain.

## **BACKGROUND OF THE STUDY**

This study is a continuation of earlier studies (Kärnä 2004; Kärnä and Junnonen 2004) related to customer satisfaction in the Finnish construction industry. The preceding studies have been made using project feedback data from the Construction Quality Association, RALA. The Construction Quality Association, RALA, is a joint association representing clients, contractors, and consultants in Finland. Its aim is to improve the prerequisites of construction quality. RALA’s tools for improving construction quality are certification of competence, certification of quality systems and a project feedback system for clients and construction companies. The basis of the feedback system is a standard evaluation, which is part of each project. In practice, the client (owner or general contractor in case of subcontracts) fills in a form at the conclusion of the project and delivers it to RALA. Feedback from the projects is collected using a 22-item scale that measures customer satisfaction according to five subheadings: 1) quality assurance and handover procedures, 2) environment and safety at work, 3) functional modes of co-operation, 4) personnel, and 5) site supervision and subcontracts of the contractor.

The central aim of this paper is to give guidelines and concrete advice on how to develop RALA’s feedback system. These can later be applied also elsewhere in the industry. However, two fundamental characteristics of the existing system need to be developed further: (1) the system measures customer satisfaction only after the completion of the project and feedback should also be gathered during production, (2) it collects feedback only from the customer but the feedback system should be applied to the whole supply chain and the feedback process should be two-way of nature.

## CHARACTERISTICS OF CUSTOMER SATISFACTION IN CONSTRUCTION

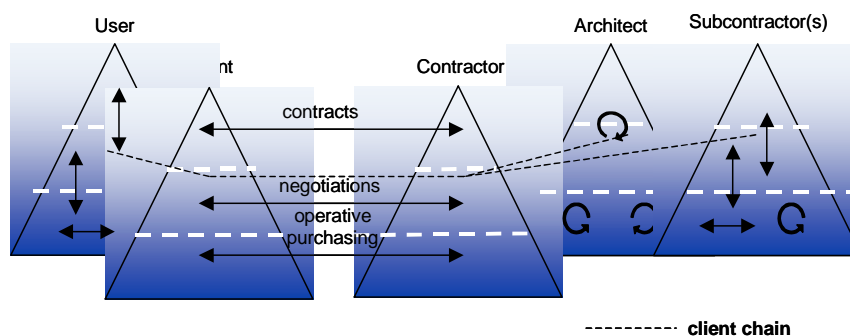
In construction, customer satisfaction could be determined by the extent to which a physical facility (product) and a construction process (service) meets and/or exceeds a customer's expectations. The customer's expectations of construction are a function of several factors: the customer's past or direct experiences with the contractor and similar contractors, word-of-mouth information about the contractor, and the customer's personal needs. In addition, a customer's expectations are affected by a contractor's marketing activities and image, the customer's own investment in the project and the relationship between the two parties.

Customer satisfaction can be experienced at the specific encounter level or at an overall level of satisfaction. Service encounter satisfaction is the customer's satisfaction or dissatisfaction with a discrete service encounter. Overall satisfaction is the customer's overall satisfaction or dissatisfaction with the organization based on all encounters and experiences with that particular organization (Bitner 1990). It is a question of the accumulation of satisfaction in the relationship. Cumulative satisfaction is the more fundamental indicator of the firm's past, current, and future performance. According to Andersson and associates (1994), it is the cumulative satisfaction that motivates a firm's investment in customer satisfaction. A customer can be dissatisfied with a specific service encounter, but satisfied overall based on the evaluation of the purchase as a whole.

In construction, the relationship between client and contractor constitutes a multilevel complex in which parties operate simultaneously and collaborate with in-groups of networks (fig. 1). Therefore, customer satisfaction in construction should be understood as a relationship-specific rather than a transaction-specific construct, and the quality of the relationships amongst project participants can influence customer satisfaction. As a result, traditional customer relationship management models used in product manufacturing will not produce the best results in construction (see e.g. Homburgh and Rudolph 2001).

One important feature in customer satisfaction in construction is that the customer might overemphasise the later stages of the project as a consequence of the project's long duration and the fact that defects during the hand-over period stay most clearly in the customer's mind (Kärnä and Junnonen 2004). The development of multiple customer feedback tools allows problems to be identified early on, before conflicts develop. The challenge is then to create a feedback system, which takes into account the customers' and the other parties' perceptions of the contractor's performance both during the construction development phase and after the completion of the facility. Developing mutual feedback during the construction phase could contribute to the identification of the essential areas where problems arise during the project and it could also improve the project parties' mutual learning. It could also improve reliability of the feedback when evaluating the success of the project.

Figure 1. Customer relationships and interactions in the construction supply chain (Ventovuori et al. 2002).



Kärnä (2004) has created a framework, which can be used to evaluate the dynamics of customer satisfaction and quality in construction. According to the framework, at the project level, the customer assesses the contractors' performance in light of three comparisons, all of which influence customer satisfaction. The first comparison is made between the quality of the building, the customer's expectations and the adjusted goals for the building. The second comparison is made between the quality of the construction process and the experiences, which have emerged during the process. The third comparison is made between the customer's expectations and experiences. Feedback in the construction process is used to measure the degree of the co-operation, which has presented in the literature as a functional or process quality (see e.g. Grönroos 1984).

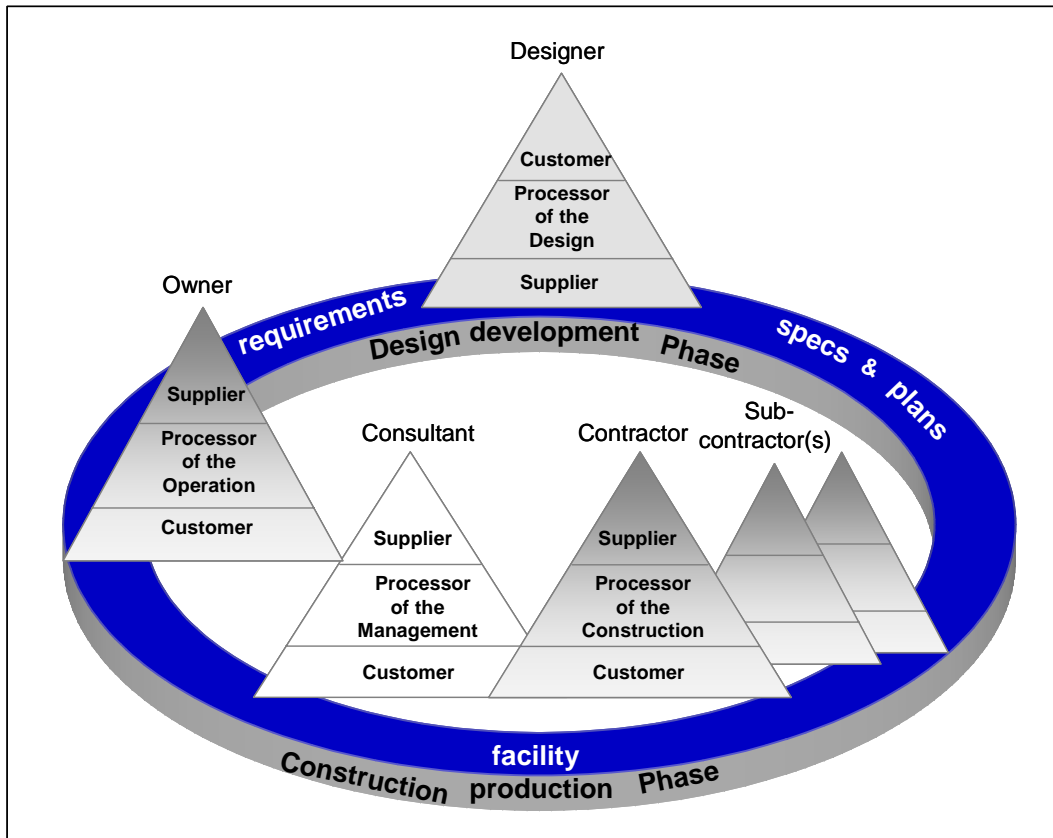
## **FEEDBACK IN THE CONSTRUCTION SUPPLY CHAIN**

Project organisation usually has complex goals. Each project member (owners, architects and engineers, construction management consultants, general contractors and sub-contractors) look at the project from their own perspectives and also have their own criteria for measuring success (Chan and Chan 2004). In order to attain project goals, a systematic evaluation of the organizations' performance is required to provide feedback for guiding the participants' behaviour (Liu and Walker 1998).

The importance of co-operation between the owner (customer) and contractor in construction is strongly emphasised by many authors. Traditionally, project success is measured by the degree of achievement of project objectives, expressed in terms of time, cost and quality (for example Chan et al.). Chan and Chan (2004) have set key performance indicators (KPI) for measuring construction success. Their study combines traditional, "hard" measures and softer subjective measures. They determine quality, functionality, the end-user's satisfaction, the client's satisfaction, the design team's satisfaction and the construction team's satisfaction as subjective measures in contrast to objective measures such as construction time, unit costs and net present value. Key performance indicators give a wider perspective on achieving project success, which is also the purpose of this paper.

For example Barret (2000) has argued that quality of construction projects can be regarded as the fulfilment of expectations (i.e. the satisfaction) of those participants involved. He highlights the importance of harmonious working relationships between the participants to achieve quality. Additionally, the customer's input has considerable implications on the outcome of the construction project. The customer has a tremendous responsibility to ensure that his/her project is successfully realized. Pocock and associates (1996) have examined the relationship between project interaction and performance indicators. They found that projects with a low degree of interaction have a wide range of cost and schedule growth as well as a large number of modifications, while projects with high degree of interaction tend to have better and more consistent performance indicators.

Figure 2. Construction value chain and the parties' roles. Adapted from Burati et al. (1992).



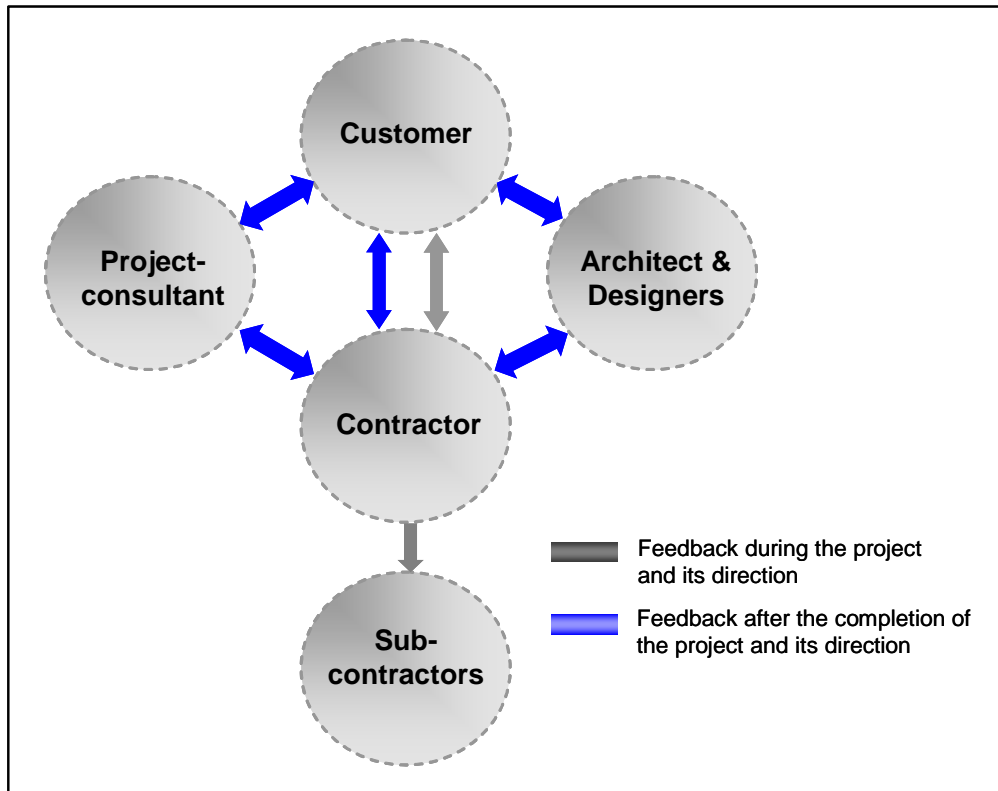
Burati and associates (1992) emphasise that strong customer orientation is achievable in construction by using the “market-in” concept, which recognizes that each work process consist of stages. Customer feedback is obtained to improve the contractor’s performance during each stage of the process. Burati and associates (1992) have also examined the roles of the parties in construction by using Juran’s “triple role” concept, which is illustrated in Figure 2. According to the concept, every party in the construction process has three roles: supplier, processor, and customer. The architect is the customer of the owner. The architect translates the owners’ requirements into specifications and plans and processes them for the contractor who is his/her customer. Owner and construction management consultant are customers for a general contractor and subcontractors. The owner receives the constructed facility from the contractor. The owner is also a customer of the construction management consultant, who guards the owners’ benefits in construction management.

Love and associates (2000) similarly suggest that each firm in the construction supply chain is both a customer and a supplier, and that the value that is created by them is a fundamental factor in the project success. Because the performance of each participant in the construction project coalition is interdependent, other participants should assess their performance. In other words, when evaluating co-operation between parties in the construction supply chain, it is essential to exploit mutual feedback. In summary, a feedback system in construction is tool for achieving successful co-operation during construction and for measuring the mutual performance of the project parties.

Figure 3 simply depicts the feedback flows between the parties in the construction supply chain. The arrow describes feedback flows during/ at the completion stage of the project and the direction of the feedback flow. For example, the contractor gives feedback to the subcontractor only during the project because typically subcontractors change during the

progress. They may also take part in the project only for a limited time. On the other hand, all other feedback flows go in both directions.

Figure 3. Feedback flows in the construction supply chain.



## BENEFITS AND USAGE OF CUSTOMER FEEDBACK

The main benefit of high owner satisfaction for a contractor is the opportunity to remain a customer's potential partner in the future. The essential objective in improving customer satisfaction is to achieve client loyalty, which can lead, for example, to partnering arrangements between the owner/customer and the contractor.

In addition, we can recognise benefits for each party in the project organisation by adopting the customer feedback system described in this paper.

Benefits for contractors:

- CF-system is a tool for improving service quality and competitiveness
- Recognition of the demand for improvement in the process
- Better understanding of problems
- Evaluation of progress towards the goal
- Helps to perceive black spots in the process on project level
- Makes it possible to determine the position of the company in competition on the company level
- In the long run, improves image of company and whole construction industry

Benefits for owners/customers:

- Enables customers to make more sophisticated and diversified comparisons when preselecting partners for co-operation
- Improves end-users satisfaction

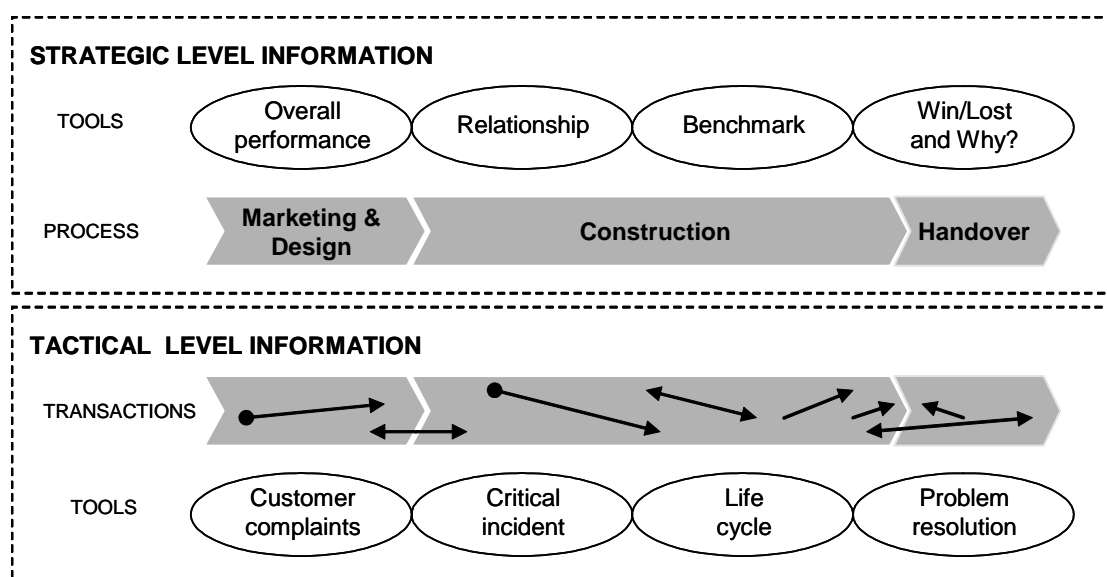
- Develops co-operation procedures and trust in relationships
- Reduces unclarity during project
- Improves knowledge of the dynamics of customer satisfaction and service quality in the construction supply chain

Using the customer feedback system, the owner would establish goals in terms of performance quality. By monitoring the project team's progress in reaching these goals, team members can re-evaluate the quality of the processes necessary to reach them. A multifaceted feedback system also denotes the areas in need of improvement in the whole branch of industry and it gives opportunities for setting benchmarks of customer satisfaction. In addition, a standard feedback system may be considered more objective than a contractor's own feedback survey, because social interaction components do not exist in the standard system.

Figure 4 illustrates the framework, which can be used as a basis for improving implementation of the feedback data in order to improve the contractor's performance. The tactical level presents a transaction-specific approach to customer satisfaction, which is the customer's satisfaction or dissatisfaction with a discrete service encounter. On the tactical level, customer listening tools provide information, which can be directly linked to the improvement of the contractor's internal processes. On the strategic level, satisfaction is the result of all of the encounters and experiences with that particular organization.

In a construction project, the customer's overall satisfaction is usually measured after the completion of the project. Customer listening tools at the strategic level can be used, for example, in developing strategic initiatives, such as customer relationship management, benchmarking and Won/Lost and Why? analyses. On the tactical level, customer feedback data can be used, for example, in solving customer complaints and analysing critical incidents. Transaction studies and overall satisfaction analysis are not distinct constructs. Furthermore, they can be seen as vital components of the development of a company's customer feedback processes. Finally, companies should pay attention to linking customer satisfaction programs to actionability.

Figure 4. Application of the feedback information applied to construction.



According to Barnes (2003) many customer feedback systems are doomed to fail before they begin. He argues that customer feedback systems can be successful only when vital

information is linked, aligned and deployed within the organisation. “When customer satisfaction data is integrated and becomes a strategic direction for the organization, improved decision making results.”

## CONCLUSIONS

At the end of this paper, we represent and summarize some demands for and characteristics of the feedback system, which have emerged from the literature review and from our earlier experiences.

First of all, a feedback system must be open and generally accepted in the industry. A mutually developed, common system is easy for the parties to commit to, which increases the rate of utilization of the system. Feedback information from the system must be comparable. The system has to produce information on the one hand to meet the needs of the single company and on the other hand to meet the needs of the whole branch of industry. The systematics of demonstrating the feedback must be definite and illustrative. It has to make multifaceted comparisons possible and provide well-defined summary reports and analyses. User interface in the feedback system should be user-orientated, since user-orientation also makes a system more attractive to users. The system must be also accommodate the use of company-specific, additional questions. As mentioned earlier, it need to enable parties in the construction supply chain to give feedback to each other, both during the project and after the completion of the project.

The feedback model is going to be created in phases, which is important for two reasons. In the first stage, the main objective was to get the customers to commit to adopting the model and to acquire the contractors’ approval for the model. The second objective was to show the practical value of the model to the parties by using the model, for example, for improving communication between the parties. It is also important to integrate the customer satisfaction data into the company’s own performance measurement system on both the project and the company level.

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