

Client Communications and Quality Satisfaction in Project-based Company

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Abstract

Customer focus and communications with clients have been in the center of the modern quality management for a long time. Whilst much has been written about qualitative aspects of client communication in the quality management systems only few researchers attempted to investigate empirically and quantitatively the potential interplay between client communication and quality. This article examines the possible correlation between the intensity of communications with clients at different stages of the turnkey furniture and interior projects, on one hand, and the client satisfaction with quality and non-quality costs, on the other hand. The findings indicate that many client interaction frequency metrics correlate with the client quality satisfaction and non-quality costs. Moreover, it can be stated with some caution that the high frequency of client interaction at the early stage of the project has a positive impact on the quality satisfaction and non-quality costs. Based on the findings, this study discusses managerial implications concerning the importance of the early involvement of the client and intense communications with the project team.

Keywords: client communication; quality management; quality satisfaction; non-quality costs; project management.

1. Introduction

Communication plays significant role in almost all aspects of business and management. Even more, 'communication is certainly the essence of civilization' (Project Management Institute, 1987). The importance of communication in management has been pinpointed by numerous authors (Rouse, 2002; Argenti, 2003; Blundel, 2004). Especially significant for the business operations are the communications with customers, consumers and clients (Wood, 2000). Project management is not an exception and in this field the communications with customers are generally perceived as one of the key factors of the overall project success (Dow and Taylor, 2010). ISO 9001 standards emphasize the impact of the communications with clients on the quality (Cochran, 2015) though there is the lack of empirical quantitative studies investigating potential links between customer communications and the quality perceived by customers. This research is intended to fill the gap in the research on the interconnection between client communication and the quality satisfaction and to report the results of empirical analysis revealing the relations between the intensity of client communications and two quality management measures (customer quality satisfaction and non-quality costs) in a project-based company.

2. Literature overview

Communication can be understood as a two-way process between the sender and the receiver whereby information is transferred through a channel (Van Staden et al., 2002). Communications can be seen as interactions between the receiver and the sender, hence the customer communications

can be interpreted as the interactions between the customer (buyer) and the provider of services or the vendor (seller) (Sheth, 1975). The communications with customers are traditionally depicted as dyadic interactions (Williams and Spiro, 1985). Although in project management customer communications usually occur within the more complicated communication network (Plokhov et al., 2016), the main information flows connecting the customer and the project are the dyads 'customer – project/ account manager/ coordinator' and 'customer – project team'. Some researchers pay attention to the fact that many companies prefer to interact with customers through one contact person (project or account manager) willingly limiting the links between customers and project teams (Moller, 2003). On the other hand, the actively used concept of early customer/ supplier/ project team involvement implies the desirability of direct connections between project teams and customers at the early stages of projects (Kurokawa, 2017). Early customer involvement concept is based on the presumption that the customer communication notably influences the key parameters of the project (schedule, cost, quality) though the empirical research on the impact of the customer communication on the project performance (especially, on quality (Korkala et al., 2006)) is limited (Henderson, 2008).

The abundant literature on quality management pays little attention to the interconnection between communication and quality of goods and services, although isolated statements about the importance of communication for quality management are ubiquitous. Johnston (1995) defined the communications with customers as one of the importance determinants of service quality. ISO 9001 underlines the importance of internal and external communications for quality management (Cochran, 2015). Zeithaml et al. (1988) identified the communication as

one of the important factors influencing the perceived quality of services in their well-known SERVQUAL model. Despite all these generalizations about the importance of client communication for quality, there is the deficit of studies analyzing the possible direct connections between communications and quality.

As the response to the discovered scarcity of the empirical studies on the interrelations between the customer communication and quality we pose the following research question:

Is it possible to identify the connections between the customer communications and the quality of the project products and services?

This question will be addressed with the help of the analysis of the data concerning the frequency of customer communications at different stages of the turnkey interior and furniture projects, customer satisfaction with quality of the project deliverables and the non-quality costs.

3. Research methodology

To approach the research question posed above the authors reached the company executing service projects and asked for the data about the communications with the project clients, quality satisfaction, costs associated with quality management.

Upon receiving agreement from the company, its project management and communication system were analyzed and the researchers decided which information about client communications and quality management costs can be appropriately used for the purposes of the research. The data collected from the firm went through the preliminary analysis to ensure its relevance for the research and the appropriateness for the correlation analysis. To identify the connections mentioned in the research question the correlation analysis was performed. Pearson correlation coefficients for each pair of investigated variables were calculated. P-value equal to 0.05 was used to recognize the identified correlations as strong or not. The findings from the correlation analysis were critically estimated and interpreted. In conclusion the authors formulated the implications for quality management in project-based service companies and suggestions concerning further research in this area.

4. Company, its projects and communication system

The primary data was received from a company engaged in the project-based turnkey interior and furniture solution services. The products of these projects are the completed, fully installed and assembled according to the design solutions, ready to use interiors including: (1) furniture purchased according to the client's specifications, (2) lighting systems, (3) and quite often doors, curtains, floor coverings and decorative elements.

The typical project of the company consists of the six major stages:

- Pre-contractual stage (PC) includes the analysis of the customer needs and requirements, negotiations on quality, price, terms of delivery and payment, formulation of the terms and conditions of the contract, and eventual signing the contract;
- Design stage (DE) starts after the contract is signed and aims to the elaboration of the complete design documentation that describes all the details of the interior to be built for the customer;
- Planning stage (PL) implies the activities connected with searching for producers and subcontractors that are needed to implement the design, contracting, planning the quality, costs and time of delivery, planning the internal production operations if needed; budgeting and so on;

- Executing stage (EX) includes delivery of the furniture and other components from the external vendors, production of untypical elements of the furniture and refinement of the furniture in order to get it prepared for installation, all necessary checks and preliminary assembly of some components on the company's production sites;
- Assembly and acceptance stage (AA) means the installation of the interiors on the clients' sites, acceptance of the interiors by the clients, closing the contracts;
- Post-delivery stage (PD) implies the correction of the minor or more serious errors and omissions and solution of the some documentary, informational or financial issues.

Within the project communication system the company's account managers serves as a contact person for customer and as a product manager and project coordinator for the internal project team. The account manager is a key figure and a center of all project communications. All interactions with clients are intentionally organized through the account manager which translates the voice of a customer to the project team. Though the direct communications between project team and the client inevitably occur, they are not stimulated and considered as working interactions with the limited scope and content. Project teams are usually include 4-15 specialists from the design, production and technology, delivery and assembly departments. According to the project management system the communications with clients should pass through and be mediated by the account managers, though in different projects the communication system emerge with different structural features due to the various factors.

Formal communications with clients such as emails, video conferences and telephone calls from the corporate numbers are registered in the firm's CRM which is used as a main platform for organizing all customer-oriented communications, the storage for all client-related information and the source of the data about clients. The CRM system affords to identify the project stage when the interactions happen and the participants of the communications. Hence, it was possible to retrieve the number of interactions with clients within all projects of the company since 2013 when the system was installed.

As a part of the acceptance procedure all clients are asked to provide their feedback regarding the quality of the services based on the extended questionnaire within the CRM system where clients input their assessments directly and the company's employees are not able to edit them. Among various client satisfaction indicators the quality satisfaction index is calculated.

The corporate information system allows the top managers to determine different types of project costs including explicit accounting costs of non-quality (cost of rework, non-conforming furniture components, replacement etc.) which can be considered as the economic measure of the quality management efficiency.

5. Data and its preliminary analysis

For the research, 37 projects with the similar budget, duration and scope characteristics were selected. More important fact is that all projects selected for the research had the same level of the technical complexity and the same level of expected quality as they were defined at the start of the design stages of the projects. All selected projects were executed by the company for the business clients during the two years period prior to the research (2016 – 2017). The information about the client communications and costs were available from the corporate information system. In particular, the following data concerning each project under analysis was retrieved from the company's CRM system:

- ❑ The number of interactions between project account managers and the clients at each project stages (A_PC – the number of ‘account manager – client’ interactions within the pre-contractual state, A_DE – the same number in the design stage of projects; A_PL – the same number at the planning stage; A_EX – the same number at the execution stage; A_AA – ‘account manager – client’ interactions at the assembly and acceptance stage; and A_PD – similar interactions at the post-delivery stage);
- ❑ The number of interactions between project teams and the clients at each project stages (these numbers are depicted by the abbreviations started from T; for instance, T_PC – means the number of ‘project team – client’ interactions at the pre-contractual stage and so on);
- ❑ Client quality satisfaction level (QS) for each project (from 1 to 5, where 1 is the lowest possible level of satisfaction and 5 is the highest one).

provided the data pertaining to the non-quality costs which were expressed in million rubles (Russian national currency), rounded to integers (NQ).

The preliminary simple analysis of the data was intended to identify the expected and necessary variability in the number of interactions with clients. It showed that the client-related communications in various projects have different distribution across the project stages. For instance, in Figure 1 there is the comparison of the profiles of interactions with clients in a project with the lowest quality satisfaction (level 1) and in a high quality satisfaction project (level 4).

It can be noted that the overall number of interactions with clients (both in types ‘account manager – client’ and ‘project team – client’) in the high quality satisfaction project is higher than in the project with the lowest quality satisfaction level. In both projects the highest number of communications occurs in the category A_DE that is the interactions between an account manager and a client during the project design stage. The least communication intense project stage is the post-delivery stage.

The comparison provided in Figure 1 can be interpreted as if there is a positive correlation between the numbers of interactions (overall and at some project stages) with clients and the level of quality satisfaction. However, some of the projects seemingly contradict to this presumptive correlation. For example, in Figure 2 there is the graphical comparison of another pair of projects in terms of the client interaction distribution across the project stages.

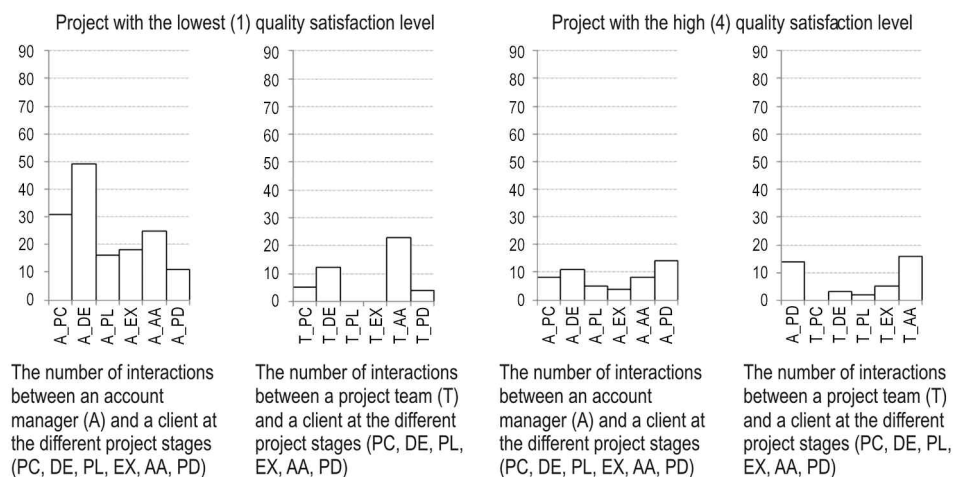
For each project additional communication metrics were calculated: the sum of all interactions with a client regardless the project stage and the participants from the company (C_SU), and the sum of interactions at all stages separately in the dyads ‘account manager – client’ (A_SU) and ‘project team – client’ (T_SU).

Financial modules of the corporate information system

Figure 1. Examples of the project communication frequency diagrams



Figure 2. Other examples of the project communication frequency diagrams



It can be seen, in contrary to the situation in Figure 1, that in Figure 2 the project with the lowest quality satisfaction level (1) has notably higher level of communications with a client than the project with the highest level (5). Hence, the simple graphical comparative analysis is not enough to reasonably answer the research questions as they were stated in the earlier sections of the article, and we need to apply more sophisticated statistical tools.

6. Findings and analysis

In order to identify the possible relations between client communications and the quality the correlation analysis was performed. We calculated Pearson correlation coefficients to measure the possible relations between the number of interactions with clients, on one hand, and quality satisfaction level and non-quality costs, on the other hand. The results are

shown in Figure 3. In each cell Pearson coefficients and P-values are provided. The pairs with the P-value less than 0,05 are bolded. These correlations can be considered as statistically significant.

	A_PC	A_DE	A_PL	A_EX	A_AA	A_PD
QS	0,264 0,115	0,374 0,023	0,095 0,577	-0,028 0,868	-0,433 0,007	0,003 0,984
NQ	-0,675 0	-0,533 0,001	-0,244 0,145	-0,335 0,043	-0,252 0,133	0,101 0,553

	T_PC	T_DE	T_PL	T_EX	T_AA	T_PD	A_SU	T_SU	C_SU
QS	0,372 0,023	0,39 0,017	-0,093 0,583	-0,071 0,675	-0,088 0,606	-0,318 0,055	0,186 0,271	0,14 0,409	0,186 0,271
NQ	-0,427 0,008	-0,567 0	-0,102 0,547	0,026 0,876	-0,244 0,145	0,037 0,827	-0,588 0	-0,499 0,002	-0,605 0

Table 1. Correlation between communication frequencies and quality measures (quality satisfaction and non-quality costs) (Pearson coefficients - above and P-values – below)

There is strong evidence that quality satisfaction level (QS) correlates with the number of interactions between an account manager and a client at the project design stage (A_DE), assembly and acceptance stage (A_AA), also with the number of interactions between the project team and the client at the pre-contractual stage (T_PC) and design stage (T_DE) of the project. Non-quality costs (NQ) strongly correlate with the number of interactions between an account manager and a client at the design stage (A_DE) and execution stage (A_EX), also with the number of interactions between a project team and a client at the pre-contractual stage (T_PC) and design-stage (T_DE). Besides, there is strong correlation between non-quality costs and the number of all interactions with a customer (C_SU), the number of interaction between the client and the account manager (A_SU) and the project team (T_SU) regardless the stages of the projects.

The findings show that many numerical metrics of communications with clients are connected with the quality satisfaction and costs of non-quality. Hence, it is possible to conclude that the client communications play important role in the quality management. However, in majority of the cases the discovered correlations cannot be interpreted as the direct influence of communication frequency on the quality measures. For instance, the negative correlation between the quality satisfaction level (QS) and the number of communications between a client and an account manager at the assembly and acceptance stage (A_AA) presumably can be interpreted in the way that the intensive communications follow from additional problems with quality during the assembly and acceptance stage. However, it is quite possible that there were some additional technical or organizational problems, risks and uncertainties concerning the scope and nature of the project, which led both to the lower quality level and the necessity for additional communications with clients.

The correlation between non-quality costs (NQ) and the overall numbers of interactions with a client (A_SU, T_SU, C_SU) can mirror the influence of the frequency of client communication on the amount of non-quality expenses. But this correlation can be understood that fewer problems with quality led to both lower non-quality costs and less frequent communications. Hence, in majority of the cases the identified correlation provides the answer to the research question, but it does not allow us to make conclusions about the causation.

However, if we try to speculate about the possible influence from the client communications within the design stage (A_DE and T_DE) on the quality satisfaction (QS), we can arrive to the less ambiguous conclusion. The design stage includes the intensive interaction with clients aimed to the comprehensive and full definition and description of all technical, ergonomic and esthetical specifications of the interior. The design efforts precede the quality creation and perception by the clients.

Hence, it is quite reasonable to think that the more frequent communications in the design stage help to build the basis for better quality satisfaction which is defined by the client later on during the acceptance of the results. The same thing can be said about the positive correlation between the communications between a client and a project team (T_PC), on one hand, and the quality satisfaction level (QS), on the other hand.

7. Conclusions

Even considering all limitations of the correlation analysis, we can reasonably state with some caution that more intensive communications with clients in the design stage and early engagement of a project team in the pre-contractual interactions with clients increase the probability of the higher quality satisfaction. This conclusion corresponds with the other research on the early engagement of clients and project participants and complements this research by the statement that early client and project team engagement brings not only cost savings and also quality satisfaction gains. As a practical recommendation for project managers and quality managers we can state that the client communications at the early stages of the projects not only bring about the benefits of the budget and schedule compliance or optimization, but also definitely correlate with the positive impact on customer satisfaction with the quality of the project product and with the non-quality costs. As a direction for further research we can suggest the analysis of the connection between client communication and quality with the help of the more advance statistical tools.

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