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A model of communicating project objectives within client organizations

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Abstract

Achievement of good performance during the pre-design stage depends on clearly defined project objectives based on the client requirements. However, in most projects there is no single entity representing the client and many different stakeholders who usually have different requirements can be seen as multiple clients for the project. This paper addresses the problem in communicating the project objectives within the client organization in construction and proposes a model of communication between different groups of clients in the pre-design stage in the Dutch construction industry. The main sub-processes of the pre-design stage were identified through the literature review. Interviews were used to understand the pattern of communication within the client organisation based on the identified sub-processes. As the result, the proposed model of communication has been identified and the involvement of different groups of clients within this model has been mapped. The proposed model of communication has been identified. The next research step is proposed.

Keywords: construction process, pre-design stage, client stakeholders, communication

1. Introduction

The ultimate goal for all construction projects is to achieve client satisfaction, hence fulfill clients' objectives set at the beginning of the project. Industry reports such as Latham [11] and Egan [8] in the UK; PSIBouw in the Netherlands [17]; CRC in Australia [4] have identified many areas of performance improvement within the construction industry. The emphasis was on client's needs and the importance for construction industry to understand them.

Despite the abundance of literature on different stakeholders' concepts in which the authors state that the client is not a single entity (see, for example, Woodhead [23] or Newcombe [15]), most of the developed theoretical frameworks still look at the client as one group of stakeholders involved in the construction projects. Large projects involve several clients on different levels, who do have different interests and power and can be seen as multiple clients for the project [15]. The way the clients are engaged in the process is based on their internal communication and hierarchical relationships [6]. The process of communication between the client stakeholders is needed to be understood and managed for clear definition and effective achievement of the project objectives.

The aim of this paper is to investigate the communication process within the client organisation and to determine the timing of client stakeholders' involvement in the process of setting project objectives. The problem of communication between the different client stakeholders has been defined as a result of the research done before. The research is based on extensive literature review, pilot study and a number of interviews with experts of large infrastructure projects. The paper describes the model of communication identified as result of many interviews with experts involved in different large infrastructure projects. This was necessary to be able to propose a generic model of communication of project objectives that is not based on single or limited case studies. The proposed model examines the processes of communication of project objectives between different client stakeholders. The analysis of communication processes in this paper is based on the main sub-processes during the pre-design stage of the project. The aim is to contribute towards the knowledge about communication of project objectives between different client stakeholders and the timing of their involvement in the pre-design process.

2. Background: short description of earlier related research

In construction, attempts have been made over recent years in several countries to establish and measure construction performance over a range of its activities to meet a set of improvement targets. One of the main tools which have been used to do that is the Key Performance Indicator, also referred to as KPI. A performance indicator can be defined as being: *' a measure used to provide information about the performance of a process or a product and the degree to which its objectives are achieved'*. The aim of many of the existing indicators has been to assess the overall project performance or to measure the performance of its main activities. A lot of authors have made a critical overview of the existing KPIs used in the construction industry. The authors argued that almost all indicators in construction are end-product oriented. Hence, the existing indicators don't provide improvement in construction process while the project is in progress. Investigation of available literature has enforced the need to develop process-based KPIs that can be used to control the construction process and its outputs while the project is still in progress and also to provide process transparency and feedback where it is required.

The work described here is part of a research project that aims at developing process-based KPIs for the whole construction process including the pre-design, design and construction stages. This paper describes the process of identifying the most important control issues to be included by KPIs for use in control of the pre-design stage of the project. These issues were identified by a literature study and were verified by experts during interviews.

The pre-design stage was defined as the stage that involves all processes necessary to take a general set of ideas and requirements to a specific well-defined project preceding the design. A comprehensive literature review was conducted to provide the necessary information to establish a conceptual model of the pre-design stage with its main sub-processes and outputs. Process mapping was used to display all sub-processes within the pre-design stage. The main sub-processes identified were the focus of control and the outputs from the identified sub-

processes were the issues that require control. The conceptual model of the pre-design stage formed the basis for identifying KPIs. Eight KPIs were defined based on the relevant sub-processes for more detailed investigation. These were then validated using interviews with twenty six experts mainly from two large construction organisations, RWS, the Dutch Ministry of Transport, Public Works and Water Management, and DHV, a large consultant agency. The representatives of the clients (RWS) and the consultancy agencies have been chosen because of their involvement and main roles in the pre-design stage in many projects. The experts have been selected based on their experience of working in the early stages of the large infrastructure projects valued between €35 millions and €1.3 billions.

The experts have been asked to comment on the proposed KPIs with the purpose to identify the most important issues to be included within them. The proposed KPI “Management of client requirements” as well as “Alignment of stakeholder’s requirements” and “Stakeholder’s involvement and Communication” received most of the attention during interviews while commenting on the proposed KPIs. The main issues discussed within these KPIs are described below.

Management of client requirements

The first question asked during the interviews in relation to “Management of client requirements” was concerning the definition of client. Because of the diversity of client stakeholders, the project manager needs to know who the main client is. Is the main client always the one, who pays for a project? In reality, there are several clients in large projects who pay for the project in one way or another. Another definition of the main client was therefore required. There was an agreement resulting from the interviews that the main client is the organisation which owns the initial problem, for which the project is instigated.

During the interviews, it was highlighted that there are clients on different levels and that before starting the process of setting project objectives it was important to define **who** the client stakeholders are and **when** is it necessary to involve them in the project. The experts had different opinions about the timing of involvement of client stakeholders. Some of the experts highlighted the need to involve different groups of client stakeholders depending on their involvement in the main sub-processes of the process; whilst the others stated that the earlier all client stakeholders would be involved, the better the project objectives would be defined.

Alignment of stakeholder’s requirements

All experts agreed that clear defined project objectives represent the basic input for all following sub-processes within the pre-design stage. This highlights the necessity to control whether the project objectives were clearly defined and agreed upon by all client stakeholders involved in the project.

One of the interesting findings of the analysis of the answers and comments from the representatives of the client and the consultancy organisations is that whilst the representatives of client organisations stated that there are usually no problems in setting the project objectives, the project managers stressed the fact that often the project objectives are not clear and that they

are not aligned between the different levels within the client organisation. Hence, one of the first tasks of the project manager is to establish the client requirements to the project and check whether these requirements are aligned between different levels within the client organisation.

Stakeholder's involvement and communication

The majority suggested to split this KPI into two separate indicators.

While commenting on stakeholders' involvement the experts highlighted the necessity to distinguish between the stakeholders who directly and indirectly influence the project. All direct stakeholders have to be involved as early as possible in the project while indirect stakeholders should be informed about the decisions made during the process and their reasons.

It is worth to mention that during the interviews on the stakeholder's involvement the emphasis put by the experts was on the public that has to be satisfied with the project and therefore be involved already in the early stages of the process.

It was also stated that communication is an essential part of the whole process in the pre-design stage. Constant team work from the beginning of the project, professional level of stakeholders involved, common sense of a problem, agreement on project objectives and ways of their achievement were mentioned as crucial factors in the communication process.

Variety of client stakeholders on different levels, misalignment of their requirements, poor quality of the defined project objectives, difference in opinions about the timing of stakeholder's involvement were the main issues raised by the experts during the interviews. This has led to the decision to investigate the processes taking place within the client organisation in more detail and to establish the communication facet between client stakeholders on different levels.

3. Description of the communication model

3.1 Stakeholder concept: client stakeholders

The start of the project is complex and interactive in nature and requires a shared understanding and commitment among different groups of project stakeholders [12]. This shared understanding can only be achieved through communication in different forms in the early pre-design stage of the projects. Communication can be defined as "a process that allows organisms to exchange information by several methods" [24]. Usually, the exchange requires feedback to check whether the mutual agreement on a discussed issue is achieved among the stakeholders involved. This is the ultimate goal within the client organisation.

At the beginning of any large project a project manager faces the following questions: who are the project client stakeholders and what do these stakeholders expect from the project. To answer these questions is an ultimate task of the project manager.

The literature review on stakeholders' concepts has shown that different authors define client as one entity without describing the whole complexity of different client stakeholders involved in the construction process, see, for example, (Briner et al. [5]; Anumba & Evbuomwan [2]; Newcombe [15]; Shen [19]). The general classification of project stakeholders based on the literature review is shown in Figure 1.

Client organisations have the most influence on the early stages of the process [16]. The role of the client in the project dramatically increased in the past few years. Smith and Love [17] made a comparison of past and present construction industries on their main characteristics. In last decades one of the main changes has been made from the insignificant to closer client involvement and position of a client as a key driver of change.

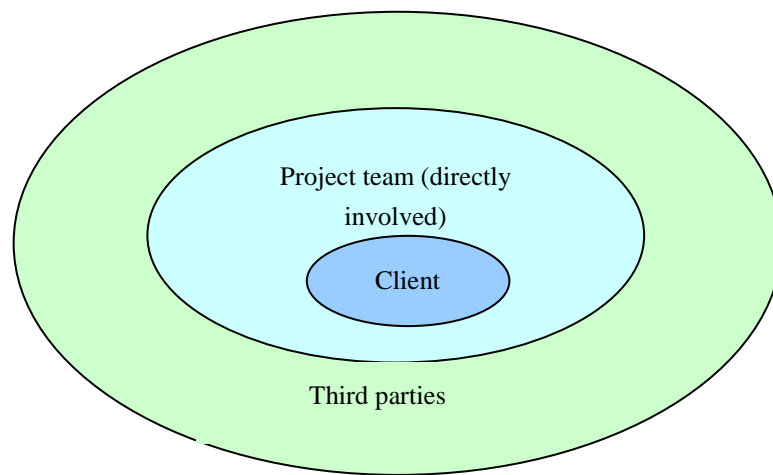


Figure 1. *Classification of project stakeholders*

According to Rettig and Simons [18], the first task of the client is to identify the project objectives. It is crucial for a project to have well defined project objectives and stakeholders responsible for the achievement of those objectives [8]. In large, multi-stakeholder projects, the project objectives must include multiple stakeholders' interests in their goal setting [3].

In addition, Anderson and Merna [1] warned that the incomplete stakeholder representation in the early stages of the projects can lead to downstream problems later in the project. It is therefore important to define when and what groups of client stakeholders are to be involved into the project within the client organisation. The research methodology proposed below describes the process of identification main groups of clients in the large construction projects and the timing of the involvement of these groups.

3.2 A model of the communication facet within the client organisation

A model of communication is identified based on the interviews with experts involved in large infrastructure projects within the Netherlands. A short description of the biggest client organisation within the Netherlands is provided as an example to understand the pattern of communication.

The Netherlands is a country where the majority of the infrastructure projects, namely roads, are publicly procured. The Dutch government represents the client organisation and consists of three main groups: central government, provincial government and municipal government authorities [21]. Other authorities are classified mainly on the basis of their tasks.

The central government is split into two units: one operating as a client at the strategic level and the other one operating as the service provider or implementation group. The strategic group is represented by the Ministry of the Transportation, Public Works and Water Management which has an agreement with “Rijkswaterstaat” (RWS) represented by the Directorates-General (DG) for Public Works and Water Management to maintain the national road network [22]. The implementation of the national policies is under the responsibility of the DG and its 10 Regional Departments. A regional department can be seen as a local representative of the Ministry of Transport, Public Works and Water Management in the region [10].

The Provinces represent the government on the provincial level. They are considered to be highway authorities of the secondary roads within their territory and are responsible for the money distribution among the municipalities within the province.

The Municipalities are the highways authorities for the roads within their boundaries. They are responsible for the total transport policy.

Hence, there are five main groups of client stakeholders that represent different levels of the government, namely central government (strategy group), central government (implementation group), its regions, client group (provinces) and client group (municipalities) as shown on Figure 2.

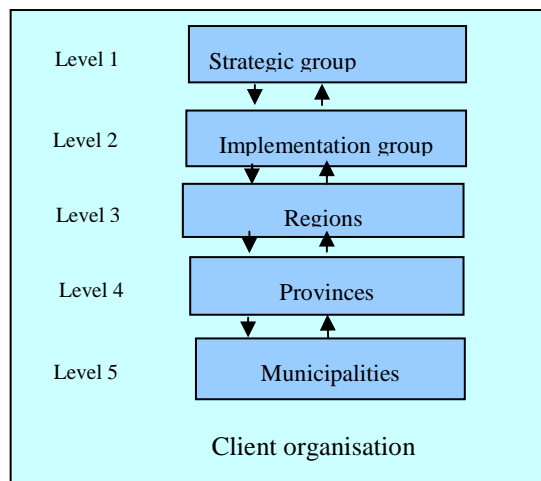


Figure 2. *Simplified structure of client organisation for large infrastructure projects in the Netherlands*

Generally the hierarchy within the client organisation depends on the type of the infrastructural projects under consideration. A model of communication for the large infrastructure projects has been identified.

The complex problem of communicating project objectives within the client organisations, the different levels of clients and the disagreement on timing of their involvement raised by the experts during the interviews formed the basis for the need to investigate the communication

process within the client organisation. The proposed model of communicating the project objectives has been developed on the basis of formal working procedures used in the Dutch construction industry [14], standard client organisational structures [13] and the knowledge provided by the experts (as shown in Figure 3).

As a result of the interviews and organisational documentation a model of the communication facet within the client organisation is proposed as shown in Figure 3, where the main sub-processes of the pre-design stage as the basis of the involvement of client stakeholders on different levels.

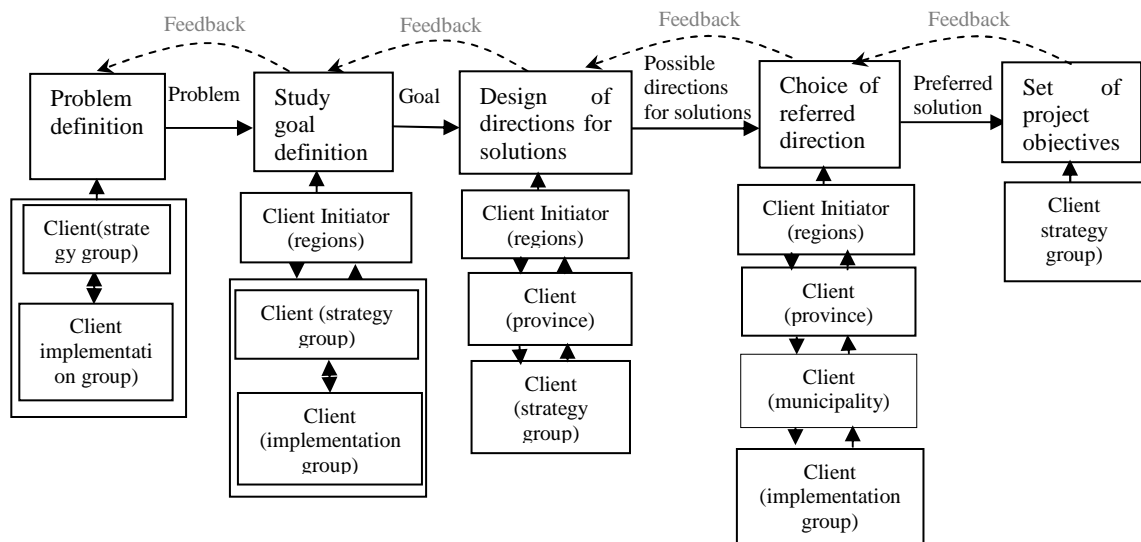


Figure 3. The process of setting project objectives within the client organisations based on the results of the interviews

By defining the main groups of the client stakeholders within the client organisation, it can be seen that client on the municipality level, for example, represents the interests of the public and the local communities and hence its objectives need to be taken into consideration during the pre-design stage.

It may necessary to point out here that although the proposed model has been developed based on the information provided from the Dutch industry, there are no specific reasons to believe that the model can't be used in the context of the construction industries in other countries.

4. FURTHER RESEARCH

The communication process involves the need for feedback to check whether the client stakeholders have achieved the common understanding and mutual agreement on the project objectives. The proposed communication model within the client organisations can be used to track the information flows between different groups of client stakeholders. The information flows concern the main outputs of the sub-processes identified earlier, namely: initial problem to be solved; client requirements to be identified and then aligned; study goal to be achieved;

possible directions of solutions to be identified and preferred solution to be translated into the project objectives. Soft system methodology (SSM) is suggested to be used to perform the identified transformation of the main sub-processes within the client organisation as shown on Figure 4. SSM has been chosen as a method of modelling people’s attitudes and behaviour that are difficult to quantify and measure in other methods. It is very suitable and effective method for representing and modelling complex systems that involve many soft and subjective issues.

In Figure 4, SG and IG were used to represent strategic and implementation group within the client organisation accordingly. As can be seen from the Figure, the project manager has to identify the client requirements on different levels (which is reflected through CR, CR1, CR2 and CR3) and to align them between each other to the unique set of project objectives.

Anumba and Evbuomwan [2] in their work described communication facets at the different stages in the project development. According to their process model, in the first stage the process of defining the project and its objectives is only under the responsibility of the client organisation. The authors assumed that the project manager is external to the client organisation although they didn’t exclude that the project manager could be a member of the client organisation. In large projects there is a need to define the project manager within the client organisation who will be responsible for the alignment of the client requirements on the different levels between each other.

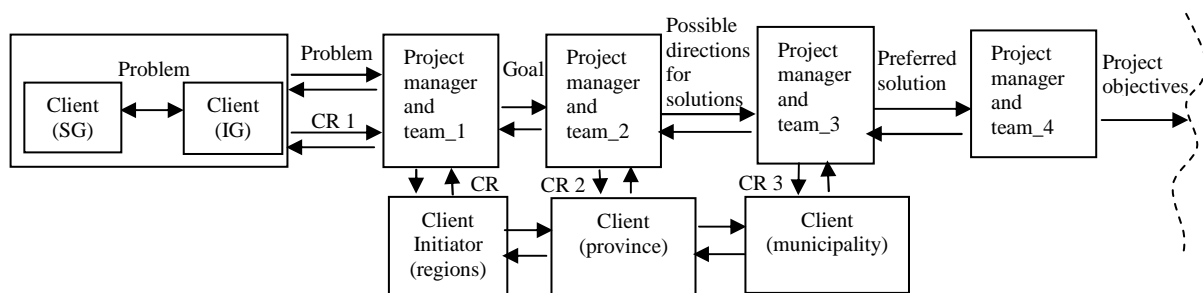


Figure 4. Applying soft systems on the process of setting project objectives within the client organisations

The main task of the project manager is to manage a project in a way optimal for achieving goal at the end. The represented process has four main outputs each sub-process is aiming at. This statement is the basis for decision to depict “the client project manager and team” through four groups, although the project manager can stay the same for the whole process.

5. Conclusions

According to practice in the Dutch construction industry almost every project starts with the pre-defined project objectives. These project objectives are determined within the client organisations that normally have to be controlled by the project manager appointed to work out the optimal way to achieve them. To define an agreed set of project objectives to be achieved, client stakeholders have to understand each other’s requirements and to come to a mutual agreement through different forms of communication.

Although the communication has been defined through a number of studies as one of the most important aspects of any construction process, there are not many models that reflect the communication between different groups of stakeholders involved in the pre-design stage of the construction projects. There is even less research done to analyse systematically the communication between the client stakeholders to make it feasible and effective.

This paper has proposed a communication model within the client organisation based on the main sub-processes in the pre-design stage. The need for the model, the methodology used to identify the model and representation of the model, have been described. This was followed by the illustration of how it could be further implemented in practice. The proposed model is adjusted to the Dutch large infrastructure projects and provides the insight into the communication between client stakeholders on the different levels within the client organisation. This communication model can be a useful tool for client project managers to control the information flows and time of involvement of client stakeholders in different levels, therefore to make the communication within the client organisation more feasible and effective. The authors believe that in addition to large public construction project, the model can provide a framework for understanding the communication mechanism in other types of projects and organisations.

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