Initiating Projects: Front-end management experience of clients and architects

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Abstract

The early stages, which occur both before and as a part of the planning of a construction or civil engineering project, are often decisive in determining the success of a project. In many cases, the prerequisites for a project are decided before the project is fully formulated. Very early stages require both a creative and a systematic product-definition and design process. This study examines how these initial phases are planned and implemented, who is involved, and what ways actors participate. Drawing on a comprehensive interview study (including interviews of clients and others stakeholders such as planners, architects, consultants and contractors), this paper scrutinizes vital questions about how to manage front-end activities. A reference group has also contributed their opinions and reflections on the results. The research project aims both to develop deeper understanding about these early stages and to develop work methods and know-how about client and architect cooperation during conceptual stages. The project has been carried out in collaboration with the National Construction Clients Forum and the National Association of Architects and has been made possible by a grant by the Board of Housing, Building, and Planning.

Keywords: needs, business objectives, pre-planning, goals, collaboration.

1 Introduction

1.1 The pre-conceptual phase in design and construction

Architects, builders, and engineers frequently use the terms "early stages", "pre-conceptual phases", or "front-end activities" (Emmitt 2007, Kamara et al. 2002, Cross N 2011). Although the majority of these professionals and real estate professionals agree that these activities are crucial, neither practitioners nor researchers have written much about the unique circumstances of these early stages. As the global market economy expands, society has demanded better product performance, price, quality, customisation for customers and end users, serviceability, safety, identity, and environmental performance. This rapid pace of change also drives the development and customisation of our properties as a result of ever-shorter organisational lifecycles, while environmental requirements lead us in roughly the opposite direction. Up-to-date and coordinated operational and facility planning with a focus on value creation has become a critical function (Tompkins et al. 2010). Technological

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development has increased interaction between clients, contractors, architects, and users of the built environment with a focus on the initial value creation process. Consequently, today's market demands have increased customisation and quality. In addition, the building industry has increased integration of operational development and strategic facility planning to transform a client's strategic needs into an architect's project needs (Ryd and Fristedt, 2007). Simultaneously, properties are also often highly complex, containing a number of different technologies, which – coupled with the demand for shorter development times – place significant demands on efficiency and project work. This interview-based study explores pre-planning and front-end activities from the clients' and architects' perspectives by focusing on two questions: How do clients and architects approach this phase and what implications and critical factors should be considered? As part of a lager research project about built environment stakeholders and their needs (supported by the Swedish Research Council Formas), this approach intends to develop a deeper understanding of the early stages of a project.

1.2 Perceptions on stakeholder needs - in general

When providing any new product or system, it is critical to understand a client's needs. Discovering, expressing, and managing stakeholder requirements is a large topic that has been discussed in several areas such as manufacturing, architecture, requirements engineering, product development, product design, system projects, and software projects (Goffin, Lemke, Korners 2010). This study explores design management (Emmitt 2011, Cross 2011) and systems engineering according to problem definition and needs identification. In addition, this study considers pre-planning activities in relation to decision-making theories, especially the role of uncertainty (Tversky & Kahneman 2000). Moreover, this study considers the perspective of business re-engineering and value management (Green and Simister 1999) with a focus on brief management (Blyth and Worthington 2010). The understanding and fulfilment of customer needs is also closely related to the concept of quality – a measure of the extent to which requirements and expectations are satisfied in relation to values (e.g., the Kano model of product features in Kano 1996). Furthermore, as Miles (1961) concluded, there are four values for an item: use, esteem, cost, and exchange. *Use value* is defined as the quality and properties that follow with a use, job, or service. *Esteem value*, on the other hand, is why an item is sought, which could be its features, properties, or attractiveness. *Cost value* is purely the total sum of costs needed to produce an item. *Exchange value* describes the qualities and properties of something that enables it to be exchanged for something else (Miles 1961). However, the construction client and the architect have distinct roles in the value creation process for developing built environments. Finally, to explain communication and interaction between parties, this study uses contingency theory (Hatch 1997) to develop empirical claims about the relationship between situational conditions, organizational structures, and organizational members' behaviour.

1.3 Overcoming the peculiarities in design and construction

The product definition and design process within the built environment has traditionally been based on intuitive judgments – the art of architecture and engineering. Work has been based either on earlier solutions or on architectural or engineering ideas. This bottom-up approach

progressively works toward a higher system level until a building or facility is finished. Evaluation and improvement often takes place by evaluating sketches, drawings, and physical and digital models (Lawson 2007). This approach can be expensive and can require extensive resources when the final project does not meet the customer's expectations. Both architects and clients rarely refer to formalised procedures, handbooks, or guidelines (Emmitt 2007). Re-design, modification, and new construction can cause delays and increased costs. More often than not, these mistakes arise from poorly defined needs. Today's ever-shorter development and production times may be encouraging the development of a more systematic process, integrated through close cooperation between architecture, construction, and production functions (Eriksson 2008). This systematic process prevents unnecessary late-stage revisions. Work is largely based on operation-specific performance requirements that define the artefact/product in greater detail, a top-down approach. A number of alternative solutions are produced based on performance requirements that are then evaluated. From this evaluation, the best solution (concept) is selected and the process is then repeated on a more detailed level, a strategy that ensures the right problem is solved. One interviewed client described this process as follows: *The term "early stages" can also unnecessarily hinder the clarifying of questions that need answers before the project starts and before a subsequent sequential construction process: a practice that is rarely compatible with present day construction, but which is performed increasingly in parallel and iterative processes.* Consequently, it is difficult to coordinate planning, designing, and constructing projects. This difficulty can be largely resolved by formalizing industry level processes and technical components although this approach is not available during the early stages as similar practises are lacking (Ryd and Fristedt 2007).

1.4 The aim of the front-end planning stage

Although some believe creative processes oppose systematic and controlled processes, both are necessary. Creativity is required at all levels, even within controlled processes where goals and rewards are more clearly defined. Front-end planning requires determining the client's needs or business objectives, the scope for a potential project to fulfil the mission or objective, project validation, basic project definition in terms of briefing or requirements management, an outline of the general design, approximate benefits, values and costs, funding, risk assessment, a basic organizational structure for the project, and a preliminary project execution plan (Ryd 2003). Based on the information developed in this phase, construction clients approve, terminate, or modify a project. Unfortunately, this activity often takes place with insufficient attention from the architects, who often are unaware of the early process and its success or failure (Kamara et al. 2002) Hence, construction clients who do not adequately incorporate an early planning stage will probably spend time fixing problems at a later stage.

1.5 Is it possible to identify when the early stages starts or stops?

Design theory literature includes both synthesis and analysis and distinguishes the work of clients and architects from the traditional academic discipline, which comprises the design and construction process. The framing of the problem is open; i.e., there are many solutions (Cross 2011). Consequently, both analysis and synthesis are used in the early stages.

Analysis involves examining the properties and behaviour of an existing system, either real or virtual. Synthesis involves creating new solutions based on performance specifications through combinations of existing knowledge and known or unknown technologies or components. Later literature (e.g., Blyth and Worthington 2010) describes the briefing process as an on-going process, a view that contradicts earlier theories or praxis (Peña et al. 2012). Furthermore, the terminology surrounding the early stages is not standardised. Many terms are used by different practitioners and by different researchers to mean different things. Or as one of the respondents stated: *The term "early stages" includes a paradox in so much as that it purports to be first in a chronological order at the same time as it is distinct in the division of stages; that is, it is assumed to have an end at which point an activity of another type begins.*

1.6 Initiation of a project

Typically, project management sees project initiation as the beginning of a project – i.e., without initiation, a project does not exist. However, initiation can consist of a decision brought about through the meeting of a management group, a political initiative, or an order placed by a client. The key is that there is a purpose and a goal, that the project is accepted by the organization, and that it has been allocated a budget. Next, comprehensive work must be done during the early stages before a decision about implementation can be made. In addition, the word project, which means to "throw forward", can best be translated as to "put forward suggestions for changes or solutions to a problem". Thus, this study clarifies what the reference group identifies: *That the early stages of design and construction planning include many different types of development, both when it comes to the business area, physical buildings (artefacts) and services, purchasers and builders, the complexity of the property and the project and the level of innovation, as well as the primary motivating forces. Traditionally, one can distinguish two motivations: technology and the market.* A third force – the community – also plays an increasingly important role. Technology, construction, or product-driven development (technology push) requires the use of new technology that opens up applications the market could not predict. For example, creating more efficient hospitals requires new medical facilities that place demands on the physical environment. The focus on industrial construction is another example of technology-driven development. It can take a long time before new technology is practical and established in the market. Simultaneously, we have seen the demand for integrated information and communications solutions as our properties expanded exponentially from the 1990s to the present day – a demand now addressed by solutions that less and less affect the physical structure of the building. *Market-driven development* (market push) is based on the market's demands and competing products and services in relation to the development of trade and industry. Here, the key is to both make effective use of as well as combine both tried and tested technology in new ways that satisfy well-established customer needs. Organizations, clients, consultants, and contractors whose operations are affected in one way or another by our built environment act differently to different market conditions. Knowing the market in relation to the community's continued planning and the development of trade and industry is a prerequisite for creating value within all areas, both in the short- and long-term. At the same time, market-driven development often requires adjustments according to trends. *Community-driven development* is based on legislation and regulations such as those

related to the environment and safety. Because the market often involves a more short-term attitude towards profitability based on competition, construction and real estate-related development entities do not always look for long-term sustainable solutions. Therefore, some social regulation through legislation is needed to eliminate solutions that do not address environmental and safety issues. Community-driven development is becoming increasingly important. In addition to environmental regulations, development within the EU and ISO as regards to safety requirements and standards can also be noted in this context. Responsibility for ensuring that a building meets the standards and terms established in the National Board of Housing, Building and Planning's construction regulations, and in the case of workplaces, in the directions given by the National Work Environment Authority, lies entirely with the client. As to the environmental adaptation of our properties, a clear trend can be seen towards development that was previously initiated by statutory regulations and which now is being driven by demands from informed tenants, users, and clients. The motivating forces behind environmental adaptation are gradually shifting from the community to the market.

1.7 When does it become a project?

Most of the interviewed clients and architects referred to their experience of working in projects. But when is it a project and what differentiates a project from other so-called continuous work? If one is formal and follows the definition given in project theory (Maylor 2005, Pollack 2007), then it is neither the size nor the length of the task that defines whether or not it is a project, rather a project is a project when it has a clearly defined timeframe. A project is a work method or a type of task that is strongly goal-oriented. A project has deadlines and uses specially allocated resources. As such, the goal must also be clearly defined and a budget must be drawn up for the project manager. There are are four qualities that define a project: 1) A clearly defined goal – unique task; 2) A defined timeframe – given a timeframe; 3) Specially allocated resources – own budget; and 4) Particular work methods – temporary organization. If these criteria are met, then the task is considered a project. The last criterion refers to the fact that everyone taking part in the project only works with it as long as the project is in progress. This fact and that the focus is on achieving the goal often makes it permissible to use new work methods and deviate from standard routines. Consequently, when uncertainty is high, traditional techniques-based project management (Pollack 2007) may not be sufficient; if too strictly applied, however, achieving essential project goals can be challenging. This study indicates that in the early stages it is common that not all project criteria are fulfilled (e.g., a budget may not be prepared until after a project starts). The initial phase includes fulfilling these criteria.

2. Methodology

This study provides a comprehensive description of aspects important to ensure an effective start to a project. Information gathered via semi-structured interviews, literature, training, and practical experience revealed the factors involved at the start of a well-functioning project. These factors have been analysed and preliminary grouped into several themes: Goals and Visions, Communication, Identifying Needs, Cooperation, and Procurement. Each of these factors will be discussed. These themes cover a number of factors that influence clients and

architects in the early stage and are interdependent and overlapping. In addition, these factors should be seen as a way to group experiences and understandings about the early stage and not as a theoretical model or a formula. The interview study, complementing the literature study, investigates the conditions under which front-end activities are carried out in several client organisations and projects. The interviews encouraged the respondents to share stories that represented critical moments from their experience with front-end activities. Interviews lasted between one and three hours. In total, 23 in-depth semi-structured interviews were conducted with clients and other stakeholders such as planners, architects, consultants, and contractors. Each interview was tape-recorded and transcribed (Coffey and Atkinson 1996). The respondents were sent transcripts, so they could correct and add or change the content if necessary. In addition, some respondents had another opportunity to revise their descriptions after some time (approximately one year). During follow-up phone conversations, we asked the interviewees if they wanted to clarify any of their answers. We also reviewed relevant project documents supplied by interviewees. A reference group also contributed their opinions and reflections on the work. These people actively followed and influenced project development. The panel included six senior architects and seven construction clients from both the private and public sector. The study was a collaborative effort with the National Construction Clients Forum and the National Association of Architects and has been made possible by a grant from the Swedish National Board of Housing, Building, and Planning.

3. Findings

Drawing on the literature, interviews, and experience from the reference group, we identified the following five themes or areas related to the challenges facing clients and architects with respect to front-end management: 1) Goals and visions; 2) Communication; 3) Identifying needs; 4) Cooperation; and 5) Procurement.

3.1 Goals and Visions

During the interviews, clients noted that projects must be firmly supported in the operational plan of the organization. The formulation of the project's purpose and the establishment of short- and long-term goals are essential in defining a project. As one architect stated: "*The construction clients didn't specify a lot of requirements before we began work, but gave us relative freedom to design and formulate the project ourselves.* It would probably have been better if we had been given more direction". Construction and civil engineering usually require significant investments. A project requires management to take a position regarding their facilities, a decision that will influence the organization well into the future. Construction and facility projects can be equated with – and in many cases are – business projects of a considerable size. A credible operational plan is needed when carrying out a business project if investment is to be approved by the relevant decision-making body. Several of the respondents stated "*that a project must have a firm foundation in the operational plan of the main operation".* The formulation of the project's purpose and the establishment of short- and long-term goals are important in defining a project. Implementation strategies and those activities and resources needed to achieve the designated goals must also be determined. I addition, the reference group pointed out that project goals and desired impacts are not

always synonymous. Project goals are related to what the project will deliver. They can be formulated for different levels and for different areas of responsibility. Desired impacts are related to what the results of the project will achieve. Factors external to a project also have a bearing on whether desired impact goals are achieved. Respondents also stressed that project goals can be formulated as one or several main goals that can be measured through a number of quantifiable sub-goals. Desired impact goals (i.e., what the results of the project can achieve) affect the stakeholders. As such, stakeholders either desire or require or fear the various impacts. Examples of project goals include delivery time, functionality, characteristics, and/or costs. Examples of desired impact highlighted include user impact, market share, profitability, and/or environmental impact. It was also concluded that projects can be divided into main goals, sub-goals (quantifiable and verifiable), and limited areas. For the client, the project form is often an effective way of realising visions and operational goals. However, one of the interviewed architects stressed that "construction clients often are relatively poor at communicating their goals for the project from the point of view of their operation". However, what is it that separates the client's continuous operational planning from the planning of an individual project? According to the generally accepted view of a project, it is not the size or the length of the commission that determines whether it is a project, but it is a clearly defined timeframe that determines its status as a project per se. As such, a project is a work method or a type of task that is strongly goal-oriented. Because the project should be carried out within a set timeframe and often uses borrowed resources, it should be delimited and prescribed a budget. It is rarely the case that a project is born out of thin air. A project always has a background – a historical aspect that has led to the desire to effect a change. Or as one respondent stated: "It can be said that all clients' projects are change projects and that the goal of the projects is to act as links in a chain of change".

3.2 Communication

"As a rule, all projects – especially in their early stages – include communicative tasks", one of the respondents stated. Much of respondents referred to their experience as inter-disciplinary cooperation in project teams, with different agendas and experiences, coming together to achieve a project goal. As such, it is important to have a good understanding of how to communicate well. As one client noted, this serves two purposes: *Firstly, to ensure the quality of the results from the outset by making use of stakeholders' knowledge and taking into account their requirements in relation to the building or facility. Secondly, to save time by allowing different teams responsible for various activities with different degrees of association to the project to work in parallel and with a continual exchange of information between them.* An information exchange requires advanced forms of communication. In this context, the simplest communication models describe senders and recipients (Craig 1999). The sender has an intention, something he or she wants to convey, which is called the intended message. However, most often there are also things that the sender does not want to convey, but which are conveyed nonetheless. This is termed static. When we communicate with others in the early stages, the reference group stressed the following: *It seems that it is easier for most of us to convey our intended message through our text than in our words and briefing sketches. It is often also the text that we prepare most. It is this that we (for various reasons) put our energy into when it comes time to communicate.* Because the subtext, which is conveyed alongside the words, represents the greatest part of the

message, it is interesting to see just what is conveyed. Not surprisingly, seeing as the majority of us do not have such good control over our subtext, static is seen most clearly there. Subtext refers to everything that lies under the text. This includes body language, tone of voice, and facial expression. Vocation, title, status symbols, gender, age, and other factors are also included (Craig 1999). The latter are examples of attributes that the reference group pointed out, which are often accorded far too much importance within the building industry, even if they are quite important for understanding and developing communication skills – especially considering that the majority of communication researchers (Craig 1999) seem to agree that in the majority of cases the subtext comprises a larger part of the conveyed message than the text. Nonetheless, in all communication it is the recipient who decides. That which is ultimately understood is that which remains after the message has been filtered through the recipient's frames of reference, prejudices, and experiences irrespective of whether the recipient is an architect or a client. For different reasons (such as any previous knowledge they possess), a recipient may understand what is conveyed in a completely different way than the sender. For example, one interviewee from the reference group noted this: "*A recipient (an architect or client, i.e.) who does not have a great deal of confidence in contractors may choose not to listen at all when meeting one".* At times, the recipient's filter is so fine that the only thing that remains is "I hear what I want to hear and see what I want to see", an attitude that those involved are sometimes accused of adopting in the early stages and that both interviewed architects and clients endorse.

3.3 Identifying Needs

There are challenges related to identifying needs, since inadequate identification of requirements often is a source of mistakes in the early stages. This theme reviews questions about the identification, prioritization, and the documentation of needs, desires, opportunities, and requirements. Several respondents noted that practical, useful techniques were required for identifying needs and that a lack of consistent terminology and theory hampered success. One architect stated the problem as follows: *Many professionals have just one or a few ways of doing things. They continue to use the same techniques they have tried before because they know that they worked well the last time. This is fine, but it's even better to have mastered several alternative approaches because techniques are more or less effective depending on their area of application. An interviewed client stressed that "a successful briefing can significantly increase and ensure the quality of the finished project. An inaccurate needs analysis can lead to significant quality issues".* However, these issues can stem from the wrong data being gathered from the wrong person using the wrong technique that are documented in an ineffective way. The reference group concluded that [i]t *is true that the consequences can sometimes be small (such as when less important functions don't work as they should), but unfortunately, it is common that inaccurately identified needs have much more serious consequences, such as that a project is delayed, that it exceeds its budget, and/or that the construction client, client, users, and tenants become, to a greater or lesser degree, dissatisfied with the way the expected characteristics of the finished product have been realised.* Identifying relevant needs within the planning, building, and real estate sector is becoming more and more complex and to a certain extent, more difficult with each passing year. The strong movement of the 1960s towards efficiency

resulted in a segmented construction process, divided into separate stages, with the purpose of monitoring, rationalising, and controlling the cost of the process: relay-like stages, each of which were relatively isolated from one another. This became a tradition in which completed final documentation formed the basis for the work performed in the subsequent stage. The development work of the following decades has focussed on the rationalisation of the management of ever-increasing amounts of information with the intention of reducing information loss. Today, many processes are carried out simultaneously, even if they progress at different rates. Requirements management processes entail a great need for coordination and communication because there are many more players involved in today's projects. At the same time, a maturity and wisdom exists that accepts that it is not possible to identify every need within a project. The work is very much about specifying what can be defined and identifying the points needed for compromise. On the other hand, one client expressed the following: *"The challenge will be to make the process between idea and product as efficient as possible using different methods. For this model to work, a complete understanding is required – a complete picture of the requirements".* Nevertheless, another client added that "[t]he approval process often times requires answers to questions that have not yet been investigated or clarified".

3.4 Cooperation

Recently, there has been a great deal of interest shown in new forms of cooperative engagement within the built environment sector. Characteristic key components are workshops, teambuilding and training in collaborative techniques, joint risk management, and value management sessions. The idea that everyone wins by working cooperatively towards the established project goals has slowly but surely gained a foothold (Pollack 2007). In more complex projects, additional stakeholders are involved and the goals are more ambitious regarding client and architect integration. Of course, there are still many hurdles to clear (Tamm and Luyet 2004), both structural and cultural, but the big breakthrough for a shared view and cooperation between the sector's different players and between the early stages, planning, production, and management has in fact taken root according to those interviewed: *The increased realization that cooperation in itself is a method for achieving better quality and profitability is a very significant step forward. . . .All successful projects are carried out through some form of collaboration – whether it be more or less articulated, formal or informal.* The interviewees emphasised that cooperation when working towards the project goals established by the client is the primary purpose of project work. Some still experience obstacles in the form of purchasing rules, for example, which limit possible collaboration over time between the client and architects and other consultants as well as between different groups of players. Competent participants in the early stages have the ability to identify, interpret, translate, and communicate the heart and soul of the project in order to have everyone involved push towards the same goal. The increased realization that collaboration in itself is a method for achieving better quality and profitability is a very significant step forward. An experienced senior architect put it this way: *The early stages have a lot to do with balancing the evident interests: those of users, construction clients, financiers, politicians and others from the standpoint of those who make demands on the project, with those made by project engineers, contractors and real-estate companies from the standpoint of those who implement.* One professional client echoed this sentiment: "*To a*

large extent it's about getting inside the customer's head – about a really close collaboration through which a project's real purpose/impact is defined and communicated". Similarly, the reference group concluded that the best projects are the ones in which those who have analysed and formulated the needs and requirements often meet together in a process that promotes support for their achievement, a process that demands lots of time but which must be allowed to take time. This study identified time pressure as one driving force behind increased collaboration in the early stages. As such, it is even more important to make effective use of all of the participants' experiences. Moreover, the very early stages are often informal in nature, which is often favourable and opens up opportunities for cooperation. Forms of agreement are gradually being formalised and guidelines (e.g., partnering) are being developed to support and simplify the process even in the early stages. At the same time, as one client stressed, "opinions have been voiced to the effect that it is not possible to force or legislate trust; this is something that must be earned".

3.5 Procurement

The reference group emphasised that the procurement strategy is "a qualified task to procure services for a construction or infrastructure project, not least of all when it comes to procurement in the very earliest stages". However, as one architect stressed, "the services that are to be purchased can never be specified in detail or be quantified during the actual procurement process as the quality and idea content of the services cannot be fully evaluated until they have been performed". Nevertheless, the purchasers of the services make their decision on the basis of the assumed ability of those who provide the requested services: "Identifying a competence profile and desired qualities and experience is important in this context and is something to which the client should attach a great deal of importance when requirements and the basis for procurement are being formulated" (an architect). It can be expected that a client who frequently initiates and implements projects conducts this kind of work continuously: *A client's marketing work should always include the element of being familiar with where different skills are to be found on the market, how they are developed, and in what way they can make the best use of them. Keeping up-to-date with the skills available on the market requires continuous surveying and follow-up.* The reference group concluded that "it is also important for the client to know which factors in the project influence cost and in which stages of the project the long-term cost has the highest risk of being impacted". One respondent stated that "[e]very client knows that the possibility to influence cumulative cost development is greatest in the very earliest stage. The further the project progresses, the more you are bound to a cost development which is not entirely open to revision". As such, it is of the greatest importance for the client to have the right focus from the very earliest stages of the project and from the outset include in their team people with knowledge of how the project can be planned and directed in the most value-added way.

4. Conclusion

This research explores pre-planning and front-end activities from the clients' and architects' perspective to contribute to the development and deeper understanding of the early stages of a project. Preliminary analysis of interviews and literature has identified five thematic areas that relate to initiating a building project. In this paper, these challenges have been

preliminary defined although not fully analysed. Still, this concluding part summarizes the identified theoretical frameworks based on the challenges presented in the major empirical part of the paper (Table 1). When organisations encourage collaborative work and trust, they can create opportunities for knowledge integration, learning, and improvement between clients and architects. Before relationships between the client and architect are established (when planning the early phases of a project), it is important to consider how relationship development can be reconciled with both knowledge integration and disagreement in order to secure a proper identification of needs and a novel start of a project. Tamm and Luyet (2004) have identified five skills, which can be learned and developed, needed by those who want to develop their collaborative abilities: 1) The desire to cooperate: to have a non-defensive attitude; 2) Truth and openness: to be aware and honest and share both facts and feelings; 3) Personal responsibility: to take responsibility for one's own choices and their consequences; 4) To have a sense of self-awareness and understanding of others' needs, opinions, and motives; and 5) Problem-solving and negotiation: to use a method that supports a cooperative climate. One interviewed architect expressed this idea as follows: "Early cooperation between parties creates the conditions necessary for achieving a higher level end-product quality, shorter process times, better communication between all and more efficient systems for experience-related feedback".

Table 1: A summary of findings and related theoretical frameworks for further work

Identified themes	Identified theoretical framework (to be developed in the future)
Goals & visions	Requirement Management, Path-Goal theory of leader effectiveness
Communication	Information and Communication theory, Prospect theory in decision making
Identifying needs	Systems Engineering, Value Management, Maslow's hierarchy of needs
Cooperation	Organization theory, Team Behaviour, Cooperation theory
Procurement	Transaction cost economics theory

Unfortunately, the empirical results reveal that many projects start without clear and quantifiable desired impact goals. It is often the case that the evaluation of the building industry focuses on individual project goals and the end product rather than the value the project was intended to create for the client. However, according to the reference group, construction clients steer the projects in many ways: a) initiating, following-up, and concluding the project; b) ensuring that the project is in line with business and/or operational goals; c) allocating resources; d) coordinating projects within the operation; e) providing tools for directing the project and project models; f) managing the organization's business opportunities and risks; and g) placing requirements on the project manager for each particular project. As a result of the interviews and through confirmation by the reference group, the purposes of the early stages were identified: through *creative* work to transform the user's (construction client's) requirements concerning *function* and *quality* as well as other desires into an *architectural* and *engineering* solution and a basis for *production* that is *economical* for both the *user/client* and *contractor/supplier* and which also allows for *other requirements* stipulated by society and affected parties (stakeholders) and satisfying *existing buildings* regarding *safety* and the *environment*. One architect summarised this idea as follows*: "The early stages should perhaps be called 'strategic stages', as they more correctly highlight the need for important, determining factors to be identified, translated, and applied*

in the appropriate stage". A client confirmed this conclusion: *"As a term, 'the early stages' does not indicate the value of the tasks that should be performed before the start of the project, as opposed to 'strategic stages', which does*".

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