

THE LEVEL OF STAKEHOLDER INTEGRATION – SUNNYVALE CASE

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ABSTRACT

Insufficient project stakeholder and team management has frequently resulted in conflicts and partial failures. Stakeholder integration and integrated project delivery (IPD) provide real opportunities for organizations to achieve more than they could on their own and are a way to improve construction project productivity. The purpose of this study is to analyze what the preconditions and challenges are for successful stakeholder integration in construction projects. This paper discusses the nature and preconditions of stakeholder integration in the construction industry, while its main purpose is to take a look at the level of integration in an IPD project. Our results are derived from the analysis of both current literature and an empirical case study. According to the theoretical findings, twelve preconditions for integration were found, and the empirical case study strongly supported these findings. Despite the good results and the project's high level of integration, the main challenges for stakeholder integration seem to be mostly related to a lack of trust and communication among stakeholders, and thus all of the stakeholders should be involved as early as possible. In addition, the nature and process of IPD is still pretty unfamiliar to many people, which increases suspicion towards it.

KEYWORDS

Stakeholder, integration, collaboration, preconditions, construction

INTRODUCTION

In any field, but especially in the construction industry, projects have increasingly become more dynamic and complex, and therefore stakeholder orientation has become a growing trend (Turner 1999). A stakeholder can be considered as a person or an organization that has influence on the operating environment of a project and its success (Olander and Landin 2005). Therefore, the members of the project team must be considered to be stakeholders. Consequently, more effective stakeholder management can be seen as a potential way to improve construction project productivity (Bresnen and Marshall 2000). However, finding the right methods and solutions for stakeholder management seems to be more difficult than expected,

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especially in demanding projects (Lahdenperä 2009). Insufficient management and leadership of stakeholders has frequently resulted in conflicts, and at least partial failures (Olander and Landin 2005). Stakeholder integration is a real opportunity for private and public organizations to achieve more than they could on their own (Lank 2006), and the early involvement of different stakeholders at the beginning of a project has a direct impact on value creation and the achievement of the objectives (Olander and Landin 2005, Bertelsen & Koskela 2004, Aaltonen and Kujala 2010).

Despite the complexity of construction projects, requirements and schedules have been continuously tightened. This has increased the challenges for stakeholder integration and management, because more interactive collaboration between stakeholders is needed. However, traditional methods have mainly been based on bilateral contracts in which collaboration is not desirable, because the stakeholders try to optimize their own operations and risks. In addition, traditional methods do not encourage stakeholders to work innovatively and towards customers' objectives. The aforementioned challenges highlight the problems of traditional methods (i.e., design-offer-build), and have forced the industry to seek methods (Davies et al. 2007) for better collaboration, such as project alliance and integrated project delivery (IPD). AIA (2007, p.2) has defined IPD as "a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to optimize project results, increase value to the owner, reduce waste, and maximize efficiency through all phases of design, fabrication, and construction."

New methods allow deeper collaboration through shared risks, profits, and objectives (Ross 2003, Olander and Landin 2005, Lahdenperä 2009). In addition, such methods encourage participants to make decisions that are best for the project, not for themselves, and work as a team towards mutual objectives (Sakal 2005). Thus, IPD ultimately leads to a competitive advantage.

Experiences in integrated project deliveries at complex construction projects have usually been encouraging (Bresnen and Marshall 2000, Ross 2003). However, IPD is a relatively new way of working, which is why some challenges have come up, and not all of the projects met the desired performance. In some cases, the project stakeholders tried to find the right team formation and design procedures through trial and error (Cohen 2010), which is inefficient. In addition, there is a lack of research on governance mechanisms and empirical research in general.

The objective of this paper is to identify the preconditions needed for stakeholder integration and analyze the level of integration in a construction project. In particular, the challenges of stakeholder integration are analyzed. In order to perceive the challenges and preconditions, the following research questions (RQ) must be answered:

- *What are the preconditions for stakeholder integration?*
- *What are the challenges in stakeholder integration?*

To answer these questions, a literature review on stakeholder integration and IPD was conducted. We studied project teams and stakeholder integration in the stakeholder literature and theory. We used the preconditions identified in the literature review to conduct an empirical survey that aimed to analyze the level and challenges of team integration in a construction project located in California. We will use the term

“team” to refer to the project team itself, and the term “stakeholders” to refer to the project team and the other stakeholders. The last part of this research proposes managerial implications and conclusions. Areas for further research are also presented.

STAKEHOLDER INTEGRATION IN THE CONSTRUCTION INDUSTRY

Bertelsen and Koskela (2004, p.5) stated that “construction is a complex production of a one-of-a-kind product undertaken mainly at the delivery point by cooperation within a multi-skilled ad-hoc team.” In order to manage and enhance the value creation and the flow of construction projects, closer collaboration and integration among the stakeholders and project team is needed. Collaboration should not be confined to that between contractors and clients only, but should involve the whole supply chain (Bertelsen and Koskela 2004, Vrijhoef and Koskela 2000).

The construction supply chain consists of a large quantity of waste and problems, which are mainly caused by obsolete management and a fragmented supply chain (Vrijhoef and Koskela 2000). From the stakeholders’ point of view, doing well in construction projects is usually determined by the success of a single firm rather than by the success of a whole project team (Cornick and Mather, 1999). This approach results in sub-optimization in the construction industry, from which the customers ultimately suffer (Toolanen and Olofsson 2006). One way of fixing this bias is to integrate all of the stakeholders of a construction project to operate as a team. Naturally, the team members participating in the project have different targets and objectives, but they have to collaborate in order to complete the project successfully (Bertelsen and Koskela 2004, Vrijhoef and Koskela 2000). A team can include competing actors and stakeholders from totally different industries and with different functions. There have already been several cases where competing firms have taken part in an integrated team, even though they were major competitors originally. Working alone is becoming a less desirable option for firms, and collaboration is escalating (Lank 2006).

The construction industry’s current procurement practices are focusing on the capabilities of single organizations, rather than the cumulative sum of the actors’ contributions. These practices, for example, tendering by price only, have led to the fragmentation of different actors, including those in design and those with construction knowledge (Akintoye et al. 2000). Therefore, the construction industry is behind other industries in the kind of productivity and quality development that results from teamwork (Glassop 2002, Hayes 2002). The utilization of teamwork can often lead to results that would have remained unrealized with the traditional approach. Moreover, using joint units increases total competence, as actors’ areas of expertise usually reinforce one another (Ross 2003, Kerzner 2003).

Collaboration has had many various labels and organizations have defined collaboration differently, for example, collaboration, co-operation and partnering. Many terms and features are the same, but true collaboration is established through formal entities, and it usually has a long-term focus, in order to gain competitive advantage (Lank 2006). For example, partnering can be seen more as an expression of traditional procurement practices than a collaboration-based relationship. Even though organizations are aiming to gain mutual benefits through, partnering suffers from sub-optimization (Ross 2003, Sakal 2005, Matthews and Howell 2005). In this

study, the focus was on true collaboration and stakeholder integration in the construction.

PRECONDITIONS FOR INTEGRATION

Although stakeholders may generally be regarded as the members of the project team, it is worth noticing that there are plenty of other stakeholders that must be involved in the team and collaboration as well (Bertelsen and Koskela 2004). Thus, in this paper, stakeholder integration and team integration are considered to be convergent issues, with the exception that stakeholder integration covers the whole project supply chain, while team integration focuses on the integration of the project team.

Teams and stakeholders in construction projects can have several levels of integration. In other words, delivery teams can be fully integrated, partially integrated or fragmented, or hardly integrated at all (Baiden and Price 2011). A team's integration can be determined by measuring the achieved level of preconditions. A precondition can be defined and understood as a necessary condition that is required before something else is to occur. Thus it is obvious that preconditions must be settled if conditions for effective team and stakeholder integration are wanted to enable.

First of all, an integrated team requires a project outcome that is mutually beneficial to each actor and operational activities that should be totally free from organizational boundaries (Fleming and Koppelman 1996, SFC 2003, Dainty et al. 2001). In addition, an integrated team should have mutual objectives and a single focus on project delivery (Love and Gunasekaran 1998). When benefits are shared among stakeholders, it is crucial to share risks as well. This is usually supported by exposing accounting documents related to project delivery (Ross 2003). The preconditions outlined above result in the increased predictability of overall costs and schedules (Baiden et al. 2003, Anumba et al. 2002).

An integrated team should aspire to work in a mutual location (SFC 2003, Dainty et al. 2001, Bromley et al. 2003), and there should be no restrictions in information sharing among the team (Evbuomwan and Anumba 1998, Bromley et al. 2003). In addition, the team atmosphere has to be fair and respectful, and an absolute "no blame" culture should prevail (Dainty et al. 2001). Finally, to unleash the full potential of the cumulative knowledge, in a fully integrated team each actor has an equal opportunity to contribute to the project delivery (Love and Gunasekaran 1998, Baiden et al. 2003, Bromley et al. 2003).

Generally, stakeholder and team integration can be defined as a merging of diverse actors, which have different objectives and needs by default, into a mutually coherent team (Austin et al. 2002, Jaafari and Manivong, 1999). The ultimate goal of integration is to enhance the effectiveness and efficiency of the delivery to the customer. This goal is achieved mainly by merging knowledge and unwinding organizational barriers (Akintoye et al. 2000, Fleming and Koppelman 1996). Although construction project teams can have different levels of integration, integration can be considered successful when the following preconditions (see Table 1) are realized.

Table 1. Preconditions Describing an Integrated Team

Preconditions	Literature Source
Team works in mutual location	(SFC 2003, Dainty et al. 2001, Bromley et al. 2003)
Organizational boundaries are ignored	(Fleming and Koppelman 1996, SFC 2003)
Team has mutual focus and objectives	(Love and Gunasekaran 1998, Lank 2006)
Each team member is allowed to present ideas concerning project delivery (fair and respectful atmosphere)	(Dainty et al. 2001)
Each team member has equal opportunity to contribute to the delivery process	(Love and Gunasekaran 1998, Baiden et al. 2003, Bromley et al. 2003)
Results and innovations are mutually beneficial	(Fleming and Koppelman 1996, SFC 2003, Dainty et al. 2001, Ross 2003)
Focus on solving problems, not on finding out who is guilty (“no blame” culture)	(Dainty et al. 2001)
Risks are shared among all actors	(Ross 2003)
Increased predictability of overall costs	(Baiden et al. 2003, Anumba et al. 2002)
Increased predictability of overall schedule	(Baiden et al. 2003, Anumba et al. 2002)
No restrictions in information sharing	(Evbuomwan and Anumba 1998, Bromley et al. 2003)
Accounting documents are exposed to every team member	(Ross 2003)

THE LEVEL OF TEAM INTEGRATION

In this study, a case study strategy was used to evaluate team integration in one construction project in California. The case study strategy allows the study of a contemporary phenomenon which is difficult to separate from its context (Yin, 1989). The case project used an integrated project delivery method, which was the main reason for its selection. However, the project did not begin as an IPD project; it was developed without the benefit of trade involvement. The IPD team was assembled after the development phase.

The case project is located in Sunnyvale (California, U.S.), and is owned by the Palo Alto Medical Foundation (PAMF), which is a Sutter Health affiliate. The project’s purpose is to replace an old medical building with a modernized medical center to serve the residents of the local city and surrounding communities. It is a multi-million dollar project with a scheduled duration of 30 months. Construction work started at the beginning of 2011, and when the new medical center opens in the fall of 2013, it will have two full stories and a pavilion in the center of the building. At the moment (spring 2012), the project is ten weeks ahead of schedule. The total construction surface will be approximately 34,200 square meters (368,000 square feet).

Data was collected from the survey, where 26 respondents from 11 different fields, and from owners to subcontractors, evaluated how well the team integration worked in the case project. The questions asked about the twelve preconditions presented in Table 1. Based on the answers, the preconditions and challenges for the team’s integration were identified. A 5-point scale was used, where 1 meant that the precondition was fully achieved, 3 meant that the precondition was partly achieved, 5 meant that the precondition was not achieved at all, and 2 and 4 were intermediate values.

THE CHALLENGES OF TEAM INTEGRATION

The case project's level of integration was very high, and the results were even better than expected. Most of the preconditions that were identified in the literature (Table 1) were very well achieved; almost every one of those achieved a level of 1 or 2. The only precondition that was partly achieved was working in a mutual location, which was rated at a level of 3. In addition, the standard deviation stayed quite low, which means that the respondents were almost unanimous. Naturally, some one-off answers were given, but their significance was almost non-existent. The means and standard deviations of the preconditions are shown in Table 2.

All of the preconditions were considered to be essential for team integration. However, working in a mutual location was seen as the most difficult to arrange, and thus it got the lowest results. According to the respondents, working full time in a mutual location was not a realistic option for everyone. For example, there were suppliers who had many simultaneous projects, and therefore they could not work in the same office or at the same site all the time. However, one of the questionnaire respondents stated that with current communication technologies, team members do not necessarily have to be in the same room, but the technologies must be used efficiently and cooperation must be organized as effectively as possible. One respondent emphasized that all team members must be aware of project decisions. In addition, it was crucial that the resources and contributions of the team members and other stakeholders were available when needed.

Table 2. The Case Project's Level of Integration

Preconditions	Mean (1-5)	StDev
Team works in mutual location	3.23	1.18
Organizational boundaries are ignored	2.69	0.84
Team has mutual focus and objectives	2.08	0.63
Each member is allowed to present their ideas concerning project delivery (fair and respectful atmosphere)	1.53	0.65
Each team member has equal opportunity to contribute to the delivery process	1.92	1.02
Results and innovations are mutually beneficial	2.04	0.87
Focus on solving problems, not on finding out who is guilty ("no blame" culture)	1.96	0.82
Risks are shared among team members	2.15	0.97
Increased predictability of overall costs	1.92	0.93
Increased predictability of overall schedule	1.96	0.82
There are no restrictions in information sharing	1.85	0.61
Accounting documents are exposed to every team member	2.26	0.96

Based on the research results, the organizational boundaries have been successfully ignored in the case project, and hence, there is no need for any major improvements. Most of the respondents believed that many of the preconditions are connected to each other, and thus affect each other. For example, it is expected that the mutual focus and objectives of an integrated team are the results of a fair and respectful atmosphere where different team members can bring out their thoughts concerning the methods and processes of the project execution. Ultimately, a good team spirit and convergent vision will be concretized to the mutually beneficial results.

Many questionnaire respondents emphasized that in order to make the team's commitment to IPD stronger, more information is needed about the IPD process itself and its incentives for the team members. This is particularly noticeable from the level of the collective risk sharing. Although the project contract encourages working towards collective benefits, this is not enough, because risk sharing also demands communication, trust, and honesty among team members. As one of the respondents expressed: "increased communication and coordination is required for the full team integration."

According to the results, it is obvious that free information sharing and increased interaction among team members can be seen as increasing predictability of costs and the schedule. But, as one of the respondents mentioned, IPD projects face the same problems as traditional projects; there are always challenges in meeting the budget and schedule. In a way, that issue is a little bit surprising, because budgets and schedules are jointly worked out and they should be realistic. Perhaps the project participants were counting too much on IPD, and the budget and schedule became too ambiguous. In addition, it was noticed that there were not enough opportunities for team members to contribute to the delivery process. It is likely that providing more opportunities for contributions could result in a more accurate budget and schedule.

One of IPD's most difficult and challenging aspects is to expose the accounting documents. In our study, the mean for this was at a good level, but the deviation was somewhat too high. Naturally, sharing cost information is against the old habits, but the accounting documents need to be developed and consistently exposed to each team member to be fully understandable and usable. It can be argued that if cost information is exposed more effectively, the level of risk sharing can also be higher, because of transparent and open activity. Thus, the team members must be encouraged to share all kinds of information more widely than they do currently. In addition, it is presumed that open book accounting increases trust among the project team and reduces suspicions of a lack of commitment to the mutual objectives.

DISCUSSION AND IMPLICATIONS

Contractors often complain about suppliers who only think about the needs of their immediate customer on the supply chain, and are ignorant about the end customers' needs. Typically, the whole industry is too remote from customer value. Hence, the further development of existing contracting models and methods is central to the possibilities of achieving a more effective construction process (Toolanen and Olofsson 2006). Traditionally, a project's objectives have been synonymous with the objectives of the delivery process, and in particular time, cost, and quality aspects of project, while in IPD the objectives are more focused on the "softer" and non-concrete values that cover the whole project lifecycle (Jaafari and Manivong 1999). Thus the contract based, fragmented, and adversarial nature of traditional construction projects has become the main barrier to IPD. Getting rid of old habits is one of the main challenges in achieving a fully integrated project team.

A central principle is that better team and stakeholder integration will solve many of the problems that traditional habits have caused within the industry. However, the nature and habits of the construction industry have shown that there is no easy way to develop an integrated project team (Dainty et al. 2001). Nevertheless, this study has shown that there is room for new methods and that the industry is willing to use them.

Naturally, the perfect integration and harmony of a project team can never be achieved, and therefore we must be very satisfied with results of this case study. Because IPD aims to create the deep and comprehensive involvement of the team and stakeholders, it is presumable that some of the preconditions are connected to each other; increasing the level of one precondition would probably lead to an improvement of other preconditions as well. Hence, these 12 presented preconditions form an intact whole, through which the level of integration can be adequately measured and evaluated.

Successful collaboration is one of the most efficient ways to gain good outcomes for all project stakeholders, especially when it brings together complementary stakeholders with different ideas and contributions. However, in the case of a highly collaborative process, like IPD, the integration of the stakeholders must be built upon mutual trust and communication (Olander and Landin 2005, Ghassemi and Becerik-Gerber 2011). Thus, these are essential preconditions for the realization of stakeholder integration. (Briscoe and Dainty 2005, Vrijhoef et al. 2001). Our empirical study strongly supported these findings. However, building trust takes time, and therefore integrating the stakeholders so that the preconditions can be created and achieved is a challenging task.

Creating a cohesive, integrated project team and an IPD culture demands a strong commitment and perseverance from every stakeholder. We propose that projects should pay great attention to the stakeholders' early involvement and assessment across the whole project lifecycle. By involving the stakeholders in the same integrated process from the beginning, the project's content and customer requirements are perceived better and the focus can be put on those. Naturally, some players are unsuitable for working in an IPD way, and thus the selection of suppliers and the establishment of the integrated project team requires great effort, so that the most capable and committed stakeholders can be chosen to carry out the project as a team. Based on that, this study's major managerial implication is that a better understanding of IPD is needed among both managers and workers. Thus, to increase the commitment to IPD, a high level of interaction, communication, and information sharing is required. This leads to an increased level of trust, and ultimately, to a better integration of all of the project stakeholders.

CONCLUSIONS

The construction industry is well aware of the need to improve the integration, planning, and control of its design and delivery processes. In addition, customers are aware of waste, productivity issues, and technological advancements, and have started to demand more value. Hence, integrated project delivery has been widely proposed to yield better results and enhance project value creation. A collaborative project environment demands that stakeholders from different organizations work together as an integrated team towards common objectives and mutual benefits.

In this paper, the level of team integration was studied in a case project through twelve IPD preconditions. Despite the fact that the case study examined the team's integration, the integration of the other stakeholders faces the same preconditions and challenges that the project team faced. In order to make integration deeper, it was proposed that all project stakeholders should be involved as early as possible. In a project where the stakeholders are defined in advance, the individuals may contribute

significantly to meeting cost and schedule objectives by reviewing the reasonableness of the duration and effort estimates. Having a team that is tuned in to the needs of the customer is a cornerstone for a successful, integrated project. However, the cultural change from traditional project delivery to IPD demands that IPD's process and nature is made familiar to the stakeholders.

There are still a number of important questions to be addressed in further research, such as the ownership of knowledge. Some examples of future research include how to ensure that the cross-organizational transfer of knowledge does not become harmful to the businesses involved; how risks can be shared; and how compensation can be tied not to an individual party's results, but rather to the team's results on the overall project.

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