

# MODEL FOR THE EVALUATION OF OWNER'S MANAGEMENT APPROACH TO THIRD PARTY RELATIONS: LESSONS FROM THE MINING INDUSTRY

Jorge Luis Palacios<sup>1</sup>, Vicente Gonzalez<sup>2</sup> and Luis Fernando Alarcón<sup>3</sup>

## ABSTRACT

Construction projects are increasingly executed under complex relationships between the parties involved. The traditional contracting approaches have not proved to be very effective to deliver successful projects, affecting the ability of owners to manage the relationship with their third parties (contractors). Moreover, these approaches promote adversarial relationships between them, causing detrimental effects on project performance. The negative impacts produced by using traditional contracting frames suggest the use of more collaborative approaches to manage their relationship between owners and third parties, which improve the quality of the relationships and performance. In this paper, a model to support the selection of third party relations is proposed, which is based on Partnering, Alliancing, Lean Project Delivery and Relational Contracting principles and it is developed in mining projects. By a detailed literature review and open interviews to experts in managing world class mining projects, the model implemented in an informal matrix was developed regarding three relational levels: (1)Traditional/Transactional, (2)Partnering/Transactional with agreement and (3)Alliancing/Relational. The main implications and lessons learned for construction from the model application in mining projects are illustrated and their potential to improve the relationship between parties and project performance is addressed.

## KEY WORDS

Partnering, Alliancing, Relational Contracts, Lean Project Delivery, Integrated Project Delivery

## INTRODUCTION

In the mining industry, just as in construction, managing the relation with third parties is one of the key strategic dimensions for business. Traditional practices and cultural patrons can negatively affect the relations between parts, provided that usually the

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<sup>1</sup> Head, Civil Engineering School, Universidad Tecnica Particular de Loja, Ecuador; [jlpalacios@utpl.edu.ec](mailto:jlpalacios@utpl.edu.ec)

<sup>2</sup> PhD, Lecturer, Department of Civil and Environmental Engineering, The University of Auckland, New Zealand; [v.gonzalez@auckland.ac.nz](mailto:v.gonzalez@auckland.ac.nz)

<sup>3</sup> Professor and Head, Department of Construction Engineering and Management, Pontificia Universidad Catolica de Chile; [lalarcon@ing.puc.cl](mailto:lalarcon@ing.puc.cl)

owners expect better performance than the providers, which generally goes beyond that established in the contracts between parties (Höhn, 2010). As a result of this expectation, the adapting capacity is reduced and so is the performance of both parties. The formal agreements or contracts could be the source of this failure in object alignment, given that these search for unilateral benefits, generating huge negative impacts on the mining business and its operations, if not properly regulated and administrated.

On the other side, in construction, many factors affect the success of a project. Chan, et al (2004) has classified the factors related to human aspects, aspects of the Project itself, procedures of the Project, managing project actions and the external environment.

Traditionally projects are awarded through a bidding process. As a result controversy and conflicts have increased, and adversarial relationships have developed between client and contractor.

This article seeks to establish the main factors that affect the relations between owners and third parties, and proposes a relational model that increases performance of this relation incorporating its fundamental aspects. To attain this goal, a literature review was conducted in relation to the practice and theory of contractual relationships, including topics such as: Partnering, Alliancing, Lean Project Delivery and Relational Contracts. Several interviews with experts of mining and construction companies were carried out to understand the mechanisms that operate in specific projects that have recently introduced successful processes to promote closer relationships with third parties.

As a result of these research activities, a model of three dimensions is proposed at a conceptual level for evaluation of owner's contracting/management approach with third parties. This model is implemented through a matrix that supports the selection of three types of relations that reflect Partnering, Alliancing, Relational Contracting and Lean Project Delivery principles. The three relational levels are: (1) Traditional/Transactional, (2) Partnering/Transactional with agreement and (3) Alliancing/Relational. In the following paragraphs the state of the art, the development and application of the model will be discussed.

## **LITERARY REVIEW**

### **PARTNERING**

In the traditional contract form of "risk transference", the parties have individual specific obligations and risks are generally assigned to the party that has better conditions to handle them. When one of the involved fails or is deficient in the proper compliance of his obligations, there are legal and commercial consequences. This concurs with the criteria by Ross (2009), that for these contracts each party has and must meet by itself its obligations, without considering that the relation in the contract is based on the principle of mutual benefit for client and contractor, in the delivery of a lower cost project.

The scenery proposed, surrounded by problems as lack of cooperation, limited confidence and deficient communication promotes an environment for all the parties

involved in a Project that leads to delays in the project, difficulties in resolving complains, excess in costs, litigations and a “win-lose” climate (Chan et al, 2004).

Partnering is used as a strategy to face these problems. The Construction Industry Institute (CII, 1991) has defined Partnering as: “A long term commitment between two or more organizations with the purpose of achieving the specific goals of the business optimizing the effectiveness of the resources of each participant. This requires a change in the traditional relations towards a culture of sharing without limiting to that concerning the organizations. The relationship is based on trust, dedication to common goals, and understanding of the values and expectations of each participant.”

Partnering is considered as informal and dynamic development, or as something more formal that can be efficiently designed. This division in perspectives is reflected in the agreements, the attitude towards contracts, the usage of incentive systems and its formulation (Bresnen y Marshall, 2000). Whatever the perspective may be about the role of the contract, it is clear that relying on a formal contract is not enough to promote deep attitude changes. The main obstacle that can be encountered is that Partnering tries to impose a “win-win” culture over the contractual and commercial framework that intrinsically is still “win-lose” (Ross, 1999).

## **ALLIANCING**

The alliance in a project (Alliancing Association of Australasia, AAA) takes the key elements of Partnering, with a philosophy of shared benefits/losses, with a transparency such that it even includes financial aspects (costs and benefits). By this outline, the project development is mostly done in less time and with a smaller budget, due to the synergy, innovation and unconditional commitment acquired that this type of alliance creates. The relations in alliance in a Project are more convenient for promoting projects or services that are hard to define or that will suffer substantial changes in time, will be critical for the performance of the organization or will require innovative solutions from the provider and creative management from the buyer (Mignot, 2009).

Partnering and Alliancing differ in the following; Partnering develops in parallel to standard contracts, without having contractual force by itself, while Alliancing agreements are formally expressed in a standard contract. Alliancing uses established commercial contractual forms to provide financial incentives that allow a good Project performance (Manley, 2002). However, alliances are not always convenient. The Victoria State Government (SGV, 2006) in Australia, mentions some conditions why alliances should not be used as a strategy to develop a project: if the risks can be clearly defined, estimated and evaluated in costs, without the need to involve the owner, the project offers important advantages and opportunities along its existence, that would not be available if alliances are used.

The success of alliances is based on good disposition from the organizations, for developing skills to generate alliances, such as the adoption of good practices for working on strategic relations (Mignot, 2009). The operations in alliance must be structured as an integrated effort between the joining firms, where the attention to cultural and communication differences is very important for the success of the operation (Sillars y Kangari, 1997).

## **LEAN PROJECT DELIVERY**

Traditionally, it is very common that in the course of the Project, each specialist works individually, losing a valuable chance of adding value to the project, that would be possible if every participant brought his/her experience and knowledge from the beginning of the project (Lichtig, 2006). This approach separates owner, designer, constructors, subcontractors and suppliers in discrete worlds that only interact by a series of transactions that involve contractual pays, delivery and risk assignment (Cleves y Michel, 2009).

Lean production can condense a series of design principles of a production system that gives the customer a product almost instantaneously on order, maintaining zero inventories, reducing losses and systematically adding value (Howell, 1999). LPD is an approach that considers a combination of lean principles in production managing and a focus on project development since its concept definition until its final use, where the goal is maximizing value (Ballard, 2008).

In mining operations, as in other productive processes, it is imperative to incorporate the involved to ensure a reliable work flow. To control the work flow and stabilize the project, the Last Planner System –LPS– (Ballard y Howell, 2003) can be used to efficiently plan. LPS focuses on ensuring reliability and compliance of feasible promises. For example, Sutter Health – a nonprofit organization that manages a number of hospitals and community health plans, based on Sacramento, California, USA– has designed an approach of LPD that deals with the different levels of the process development on a project: the physics of the work (production), the organization and the contracts. Their strategy based on LPD can be summed in what they call “The 5 great ideas”, which are part of a declaration of principles included in a relational contract signed by the designer, contractor and owner, to ensure the adoption of these five great ideas (Lichtig 2006): i) Collaborate; really collaborate, throughout design, planning and execution; ii) Increase relatedness among all project participants; iii) Projects are networks of commitments; iv) Optimize the project, not the pieces; and v) Tightly couple action with learning.

## **RELATIONAL CONTRACTS**

The obligations and rights of the contracting parties are typically established in the contract conditions. An orthodox approach assumes that both parts are rational maximizers, who will try to maximize their own interests as much as possible. In this context, it is difficult to count on the unconditional cooperation between the parties, unless that a support platform adequately conceived as a contractual frame is in place. That way, one of the decisive keys to generating a “win-win” environment, is the selection of the types of contracts (Cheung et al, 2006).

Contracts of traditional orientation do not support integration and creation of teams. In essence, a change in the contracting approach is needed, in contractual and non-contractual terms. The application of Relational Contracting (RC) principles is considered one of the approaches that can cause these changes (Rahman et al, 2007). The base of the RC is the recognition of the mutual benefits and “win-win” scenery through higher cooperative relationships between the contracting parties (Kumaraswamy et al,

2005). RC promotes the generation of trusty organizational environment, open communication and employee's participation. This is achieved by the fast creation of a Project culture, to create a longer lasting corporative culture in organizations (Chan et al. 2004).

Ian MacNeil (Campbell, 2004) sets two fundamental classifications for contracts and its relations: Transactional Contracts (TC) and Relational Contracts (RC). TC are traditional forms of contracting that emphasize common standards of competitive character, which essentially try to specify performance (and impose strict responsibility); such approach is called "Implementation of the plan" by MacNeil. RC emphasize common standards of cooperative character, such as preservation of the relationship in the contractual solidarity.

Kumaraswamy et al (2005) mention some factors that make RC implementation easier: support of senior management and the customer to the RC focus; alignment of team goals; trust; open communication and work team culture; clearly defined and fair risk allocation; experience in RC and adequate resources; and flexible contracts. In the same way they mention the factors that difficult the use and implementation of RC: unenthusiastic participation towards RC focus; inappropriate contractual and planning strategies; inappropriate risk allocation; exclusion of important subcontractors and providers in the risks and rewards plan; persistence of adverse cultures between the contracting parts; lack of commitment from senior management; and incompatible corporative personalities and cultures.

## **METHODOLOGY**

The research methodology adopts a grounded triangulated approach in three stages. A review of concepts and successful cases reported in literature were investigated initially. The second phase was based on interviews to executives of world class mining and construction companies that have developed innovative relations models in Chile and other countries. These executives represents BHP-BILLITON, XSTRATA-BECHTEL and Minera Los Pelambres from mining industry, Komatsu Chile and Mas Errázuriz, contractors for the mining area, and Norske Skog from manufacturing. Finally, interview results and literature review were structured on a doble entry matrix based on the concept of an informal matrix.

## **INNOVATING IN RELATIONSHIP MANAGEMENT**

The successful cases available in the literature show that third party managing models different from the traditional have been successful in fulfilling the goals of the projects (Dunstan, et al, 2006; Höhn, 2010).

Traditionally contract negotiations have been the result of formal and simultaneous transactions, where each part seeks to maximize its goals at the expense of the other (win-lose relation). In this model the interests are antagonistic and generate adverse relations between the parties, because there are no common goals but goals that respond to each party's particular interests, usually this is to be paid with money. In spite of this,

conditions are clearly defined and it is assumed that they are actions of good faith, however, there is a predisposition to suspect that one of the parts will fail, so that contracts include abundant clauses with penalties in case of failure. The model does not include the fact that for one of the parties to fail, a chain of events has preceded that lead to failure and forgets the reasons, without sensing that the malfunction of one party directly and simultaneously impacts the other party. Also, the pressure to keep prices low has lead to create short term relations, deteriorating the relationship because of opportunistic actions from any of the parties.

Under this scenery, the possibility of innovation is very limited due to the structure and characteristics of the contracts. Because of this, client and providers are applying informal agreements that converge in common goals. The evolution of traditional contracts towards contracts that generate collaboration has allowed the development of local abilities. This type of relation seeks to bring interests closer generating a collaborative and trusty environment, banishing the suspicion spirit of the traditional model. These cooperative/collaborative informal agreements are the result of successful long term relationships where the parties have gotten to know each other and have a genuine desire of working together and creating value for future cooperation.

To get to this stage, it is necessary to build a spinal column of experiences working together owner and provider, facing challenges in the area of specialty of the provider, designing incentives based on performance indicators that measure the attainment of common goals. Also, the provider benefits from reliable planning, better project monitoring and increased business volume and reputation.

## **CONCEPTUAL MODEL PROPOSAL**

In the literature reviewed, actions that improve performance in projects are reflected in safety performance, safety incidents, occupational health, environment impact, and others. Some of these actions, have been adapted from the manufacturing industry and successfully implemented in mining projects: efficient usage of resources in a coordinated way and with active collaboration between the parties; visual communication that greatly facilitates information transmission between people from different culture and education level; coordination that articulates chains of commitment between the participants and ensures its compliance; promotion of a global vision of the project, ensuring systemic improvements instead of local optimization; record keeping and revision of the lessons learned; relation and trust development to share mistakes and learning opportunities.

From the interviews it is clear that some companies in a consciously or unconsciously consider and/or accept that the relationship with third parties is dynamic and should be adapted to new project and market tendencies and conditions. These companies manage different ways of relating with their providers, covering from traditional models to some very innovative ones. Figure 1 shows one of the conclusions of this study: the relationships with third parties evolve in a continuous: from a traditional approach based on simultaneous transactions and short term relations in one extreme, to integrated collaboration of the parts using Alliancing, based on formal/contractual agreements that

are flexible (relational contracts) on the other end. In the middle, there is a transition with a Partnering type of approach, where transactional contracts are used together with collaboration agreements and informal commitments, before a consolidation of Alliancing contracts.

As the relationship evolves from a traditional approach to an integrated one, management and business decisions and actions that were hidden before are discovered. In the traditional model, the contract is the framework of the relation between parties, where most decisions and actions are tacit or are not visible in the contract. This is the reason why as the model evolves towards integration, it is necessary to use more tools to attain goals.



**Figure 1:** Evolution of relationships with third parties

## RELATIONAL/CONTRACTUAL MODEL MATRIX

Several researchers have conducted identification processes for critical aspects necessary to achieve successful processes for each of the approaches shown on Figure 1 (Tang et al., 2006; Mignot, 2009). Certain aspects with significant impact management of contractual/relational and are more frequent in innovative processes were identified from the interviews. Using information obtained from literature and interviews, four dimensions were defined, and their critical factors in the interaction between owners and third parties (Table 1). A review of the interaction of the factors included in each dimension can help to determine the relational/contractual model between owner and third party providers.

The model depicted in Table 1 is based on a double entry matrix that presents three strategies or models of relational/contractual management. The factors associated to each dimension are related to the different models depending on the factor condition required for the relationship. The level/condition required for each factor input is qualitative and a result of a judgment that should be oriented by company policies and principles regarding relationships with third parties. The matrix allows the decision maker to examine how relations should actually function between the parties and provides guidance to make decisions regarding the type of relational/contractual model that should be adopted.

According to evidence in the literature, when the relationship between parties evolves from a traditional/transactional one to an integrated alliancing/relational one, higher performance could be expected. Although valid, this analysis could be biased because it assumes that the optimum model for any relationship will be the Alliancing/Relational

model. Nevertheless, by incorporating other variables such as: economic parameters, type of activity in the relation with others, activity outsourcing level, production system effort in productive activities, etc.; the alluded linear behavior between the relational/contractual level versus performance could not be valid. Then, the determination of the impact of a certain relational/contractual level on performance is neither linear nor direct and it depends on other elements that are related to the business model and the guiding principles chosen by the company which require further analysis.

**Table 1:** Relational/Contractual management models matrix

| DIMENSIONS | FACTORS                        | Relational/Contractual Managing Strategy |  |                       |                       |            |
|------------|--------------------------------|--|--|-----------------------|-----------------------|------------|
|            |                                | Traditional/Transactional                | Partnering/Transactional with Agreements | Alliancing/Relational |                       |            |
| A          | Interdependency                | A.1                                      | Collaboration level                      | Low                   | Moderate              | Very high  |
|            |                                | A.2                                      | Goal alignment                           | Low                   | Medium                | Very high  |
|            |                                | A.3                                      | Commitment level from the participants   | High                  | Medium                | Very high  |
|            |                                | A.4                                      | Trust level from the participants        | Low                   | Medium                | Very high  |
|            |                                | A.5                                      | Leadership                               | Low                   | medium                | Very high  |
|            |                                | A.6                                      | Scope definition                         | High                  | Medium                | Low        |
|            |                                | A.7                                      | Communication                            | Limited by contract   | Moderate              | Very high  |
|            |                                | A.8                                      | Transparency                             | Limited by contract   | Moderate              | Very high  |
|            |                                | A.9                                      | Harmony                                  | Limited by contract   | Moderate              | Very high  |
|            |                                | A.10                                     | Use of information technologies          | Limited by contract   | Moderate              | Very high  |
| B          | Contractual and of business    | B.1                                      | Contractual relationship                 | Adverse               | Cooperative           | Integrated |
|            |                                | B.2                                      | Duration of the relationship             | Indifferent           | High                  | Very high  |
|            |                                | B.3                                      | Flexibility                              | None                  | Moderate              | Very high  |
|            |                                | B.4                                      | Equity                                   | None                  | Moderate              | Very high  |
|            |                                | B.5                                      | Supply chain                             | None                  | Medium                | High       |
| C          | Risks and incentive mechanisms | C.1                                      | Risk distribution                        | Transferred           | Partial and localized | Equal      |
|            |                                | C.2                                      | Incentive mechanisms                     | None                  | Few                   | Many       |
| D          | Activity criticality           | D.1                                      | Complexity                               | Low                   | Moderate              | Very high  |
|            |                                | D.2                                      | External factors                         | None                  | Moderate              | Very high  |
|            |                                | D.3                                      | Economic value of the transaction        | Indifferent           | Moderate              | Very high  |

Although research was developed in the mining industry, the model could be used and adapted to the construction industry, given the ease of use and similarity between mining activities and construction projects. So, traditional contract forms evolve into Alliancing could be a strategy to improve performance in the field of construction. The following discussion explains the matrix settings selected for each model. Nevertheless, these settings could be modified for certain cases depending on specific situations and should be reviewed before applying this matrix.

### TRADITIONAL/TRANSACTIONAL STRATEGY

This strategy features low interaction levels between the parties. However, factors like commitment level and scope definition require high levels of interaction, due to the fact that in transactional contracts the responsibilities of the participants are clearly defined and a high level of commitment compliance is demanded. The owner and contractor interaction for the communication, transparency, harmony and information technology factors is usually low mainly because of the adverse relation. Nonetheless due to the stipulation in the contract another type of interrelation could prevail, which is the reason for preferring to qualify this interrelation as “limited by the contract”.

The contractual relation is adverse, not precisely because of the contract, but because of a reaction to the deficient management of project uncertainty, and because the interests



and obligations of the participants are normally not aligned with project's goals. The factor duration in the relation is based on the convenience of generating a long term relationship. Traditional contracts are mostly based on a relation that lasts until the product is delivered or the project is finished. For flexibility, equity and supply chain factors there is no interrelation between the contracting parts due to the nature of the transactional contracts, which considers the contractor unable to add value to de business.

The transactional contracts are known for transferring the risk to the provider, who in turn, generally charges the owner an economic value for assuming that risk. Generally, there are no incentive mechanisms.

These contracts do not do a good job in incorporating uncertainty management as part of the contract, and in bringing several parties into one contract. The complexity is considered low. Their ability to manage external factors impact is also limited. The economic value of the transaction was considered indifferent, since the transactional contracts are designed to correctly function independent to the amount of the transaction.

#### **PARTNERING/TRANSACTIONAL WITH AGREEMENTS STRATEGY**

This model exhibits mostly medium or moderate levels of interrelation between owner and provider because it works under the transactional contracts with commercial agreements or good will for the generation of collaboration between participants. The participants using this strategy have increased their level of interrelation considering the transactional model as a base. At this point the parties can maintain a good collaboration environment and obtain satisfactory results, considering that there is mutual interest in maintaining a long term relationship.

The risk is considered as partial and localized given that generally the main contract assigns risks. The incentives motivate the parties to share risk in a different way than the transactional strategy. Incentives can be monetary, stable relations, better work conditions, timely information, etc.

#### **ALLIANCING/RELATIONAL STRATEGY**

The alliancing/relational model demands a very high interaction between owner and contractor for most factors, because of the integrative approach that this model requires. The exception of this behavior is project scope definition, since alliances are a valid option for a Project where uncertainty is higher due to the project circumstances and not necessarily for organizational deficiencies. Therefore, interaction for project scope definition is considered low for this type of relational/contractual strategy.

The type of contract stipulates that the contract should integrate the participants. Similarly, the supply chain is directly linked with the project expectations, so it requires a high level of interaction between them.

Because of the type of contract, the risks are fairly distributed between the members of the alliance, this requires the use of many incentive mechanisms that feed and encourage collaboration between parties.

#### **CONCLUSIONS**

The Relational/Contractual management models matrix allows for a better understanding of the levels of interaction between owner and provider and supports the design of the relational and contractual model that the client want to use with third parties. The relationship between the owner and provider can be managed according to three relational/contractual managing models that are found as a continuum in three states: Traditional/Transactional, Partnering/Transactional with agreements and Alliancing/Relational.

The three relational/contractual managing models identified, are structured in an informal double entry matrix that allows the selection of the most convenient management model for a Project, taking the desired level of interaction between parties as reference, as well as the ideas and principles that define the way the organization wants to develop its relationships with third parties.

Although the informal matrix proposed is still presented at a conceptual level, it can be easily applied in practice. We believe the model has a strong potential for its use and may easily be applied under the modeling structure used, which should be tested. Future work should include the development of an analytical/qualitative approach that other variables, identifying quantitative parameters for each factor that could allow a quantitative assessment of the state of the relationship with third parties and analysis of the model implementation in real projects. The informal matrix can be transformed in a diagnosis/design tool for contractual relations with third parties.

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