

# Application of Inventory Management in Construction Project

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**Abstract:** Trust is central to every transaction that demands contributions from the parties involved. The financial turmoil resulting from the credit crunch that has troubled the global financial markets is an illustrative example of how the absence of trust paralyzed the banking credit system. Until only a few weeks ago, few, if any, appreciated the real significance of the money markets within the wider global financial crisis and the importance of trust in these markets. But the freezing of the market for medium-term funding reflects a total loss of trust between banks. This paralysis of lending from loss of confidence jeopardizes the flow of money to every family and every business in the country. Analogously, if parties in the construction supply chain do not trust each other, their skepticism may not completely paralyze the operation but will certainly create unnecessary enquiries and checking procedures, resulting in serious bottlenecks and inefficiency. Changes are common during the construction phase of a project.

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## 1. Introduction

In a distrusting environment, developers always assess the submission of the contractor with respect to change orders with an opportunistic lens. Likewise, contractors often inflate their submission in anticipation of hostile and skeptical evaluation. This scenario is extremely common in construction with a dispute being the ultimate outcome. Trust is a fundamental ingredient or lubricant of social interaction and its positive impact on communication, leadership, management, negotiation, game theory, performance, labor relations, self managed work teams, construction project management and owner/contractor relationships, has been well documented.

Notwithstanding, having a trusting contracting environment is an exception rather than the norm. In the connection, creating a trusting contracting environment has been identified as a major reform that can revitalize the construction industry. The notable progress in this regard is the use of partnering. By promoting trust, partnering has been identified as an effective tool to alleviate adversarial relationships. In fact, trust has been named as one of the most important pillars supporting the success of partnering. In construction contracting, trust has been generically operationalised as the willingness of project team members to share information. This definition highlights the mutual dependence of contracting parties and a trusting environment can foster appropriate information sharing so that both can honor their commitments. Trust-related procedures could provide maximum cost savings in construction project. In this connection, trusting relationship can facilitate project cost reduction. Recent studies including some conceptual frameworks on trust and project relationships between client and contractor have been reported. They suggested that the presence of trust is crucial to overcome the adversarial outlook of construction industry although there is little empirical study to support this view. This study aims to develop this framework into a trust inventory (hereafter the proposed inventory). The three trust types included in the framework are system-based, cognition-based and affect-based. System based trust found on performance and faith in the system. Cognition-based trust is built on knowledge and understanding. Affect-based trust addresses feelings and emotions, thus tends to be more personal. These three types of trust co-exist and are mutually dependent. A system is only as good as its weakest point; hence a trust building project manager must install credible system and care for the team members. Although trust has been advocated as the key factor in enhancing efficiency of the construction industry, there has yet reported attempt in developing an instrument to evaluate trust status. This study aims to fill this gap. Measurement instrument is often described as inventory. Notable examples include Organizational Conflict Inventory, Organizational Culture Inventory and Inventory of Interpersonal Problems. Upon completion of the proposed trust inventory, the level of trust by types can be evaluated. At project level, regular periodic evaluations shall provide longitudinal data on inter-organizational trust status. This information shall inform project management actions. Another use of the inventory is to provide trust status measure organizational studies where trust is a variable."1"

## 2. Case Study

Name of Site	-	GANGA PLATINO
Name of group	-	Goel Ganga Group

Project name	-	Civil Construction works of residential Buildings
Site Location	-	Kharadi, Pune.
Architect	-	Interics DWP PVT. LTD.
RCC Consultant	-	Design Works Engineering PVT. LTD.
Project start date	-	April 2014
Cost of Project	-	51 core
Total Area	-	9 lac sq.ft.
DGM	-	Mr. Ashish Gavande
Expected completion Date	-	Feb 2018

### 3. Result and discussion

#### 3.1. The Measurement Statements of The Proposed Trust Inventory Table No. 1 A Trust Framework for Construction Contracting

Trust types	Elements		Characterizing trust behaviors	Total	% Agree	% Disagree
System based	Organizational policy	1	Sufficient organizational resources in response to contracting parties needs increase the sense of belonging to the organization	11	74	26
		2	An organization should clearly define the job tasks required of individuals	12	80	20
		3	Good management of organization system reinforces goal achievement such as continual improvement, profit making and business expanding	10	67	33
		4	Organization policy should be clearly specified for solving cost, time, risk and safety issues	9	60	40
	Communication system	1	Using effective communication methods are essential at work	11	74	26
		2	Formal communications with working partners should be documented in a systematic way	10	67	33
		3	Keeping a good communication system would avoid ambiguous situations and discrepancies occurring at all times	9	60	40
	Contracts and agreements	1	A clearly defined contract document brings confidence and comforts to all parties	11	74	26
		2	Information in the contract document should be explainable to parties who may be affected	9	60	40
		3	Clarification of contract terms and agreements is important before the commencement of work to minimize future arguments	8	54	46
Cognition based	Communication & interaction	1	Keeping a long-term relationship with the other party has the benefit of	12	80	20

			maintaining better communication between individuals			
		2	Good interaction allows me to obtain more information from the other party	10	67	33
		3	Attending work-related interaction frequently facilitates better understanding between individuals	8	54	46
		4	Open and honest communication enables more work-related information exchange between individuals	11	74	26
	Knowledge	1	Track record is an essential tool to judge the other party's competence and consistency level	11	74	26
		2	Financial stability is one of the factors in evaluating a company's reliability	8	54	46
		3	The other party will have confidence to work with me if I have a good reputation of being honest	6	40	60
Affect-based	Being thoughtful	1	Showing care and concern to my workmate at appropriate time impresses his/her feeling more comfortable to work with me	12	80	20
		2	Being considerate is a tool to understand an individual's needs and feeling at work so as to achieve his/her maximum capacity	8	54	46
		3	Taking each party's needs into account in decision-making process encourages a compromising and satisfactory outcome	9	60	40
	Emotional investments	1	Having a good personal relationship with the other party may also improve working relationship with him/her	11	74	26
		2	I am more likely to rely on a working partner whom i have good impression	9	60	40
		3	Spending appropriate time, energy and effort to understand other party's personal details and work background eliminates frictions between each other at work	6	40	60

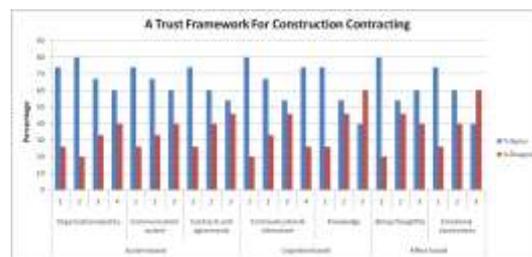


Figure No. 1 A Trust Framework for Construction Contracting

### 3.2. The Measurement Statements Of The Proposed Trust Inventory

Table No. 2 The Measurement Statements of the Proposed Trust Inventory

Trust types	Elements		Measurement statements	Total	% Agree	% Disagree
System based	Organizational Policy	1	In response to contracting parties' needs, we shall increase the sense of belonging to the organization by providing sufficient	11	74	26

			organizational resources				
		2	We shall clearly define the job tasks required of individuals	10	67	33	
		3	We shall reinforce goal achievement such as continual improvement, profit making and business expanding	9	60	40	
		4	We shall clearly specify for solving cost, time, risk and safety issues	11	74	26	
	Communication System	1	We shall use effective communication at work	12	80	20	
		2	We shall document the formal communications with working partners in a systematic way	9	60	40	
		3	We shall keep a good communication system to avoid ambiguous situations and discrepancies	8	54	46	
	Contracts and Agreements	1	We shall clearly define contract document so as to bring confidence and comforts to all parties	12	80	20	
		2	We shall explain the information in the contract document to the parties who may be affected	10	67	33	
		3	We shall clarify the contract terms and agreements before the commencement of work to minimize future arguments	12	80	20	
	Cognition-based	Communication & interaction	1	We think that keeping a long-term relationship with the other party has the benefit of maintaining better between individuals communication	13	87	13
			2	We think that a good interaction allows me to obtain more information from the other party	8	54	46
3			We think that attending work-related interaction frequently facilitates better understanding between individuals	7	47	53	
4			We think that open and honest communication enables more work-related information exchange between individuals	11	74	26	
Knowledge		1	We think that track record is an essential tool to judge the other party's competence and consistency level	10	67	33	
		2	We think that financial stability is one of the factors in evaluating a company's reliability	8	54	46	
		3	We think that the other party will have confidence to work with me if we have a good reputation of being honest	9	60	40	
Affect-based	Being thoughtful	1	We feel that showing care and concern to my workmate at appropriate time impresses his/her feeling more comfortable to work with me	11	74	26	
		2	We feel that being considerate is a tool to understand an individual's needs and feeling at work so as to achieve his/her maximum capacity	8	54	46	
		3	We feel that taking each party's needs into account in decision-making process encourages a compromising and satisfactory outcome	7	47	53	

Emotional investments	1	We feel that having a good personal relationship with the other party may also improve working relationship with him/her	12	80	20
	2	We feel that we are likely to rely on a working partner whom we have good impression	10	67	33
	3	We feel that spending appropriate time, energy and effort to understand other party's personal details and work background eliminates frictions between each other at work	7	47	53

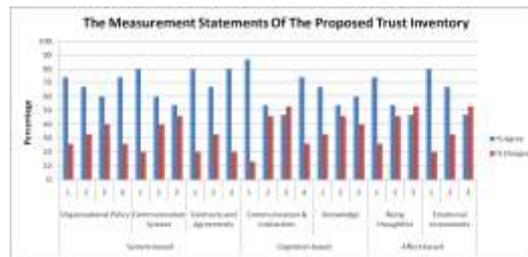


Figure No. 2 the Measurement Statements of the Proposed Trust Inventory

#### 4. Conclusion

The objective of this work was to shed light on obstacles to, and opportunities for, increasing the effectiveness of construction firms in managing buyer-supplier relationships. More specifically, the focus was on assessing the maturity level of buyer-supplier relationship management by construction firms. This assessment demonstrated a large potential to improve the management of buyer-supplier relationships in the Indian construction industry.

- After studying inventory management models it can be concluded that there are, at the same time, both major factors impeding, and positive developments and opportunities stimulating, improved management of buyer-supplier relationships in Indian construction firms.
- The impeding factors can be summarized as the lack of formalization, documentation and communication (both internally and with suppliers) linked to the various policies, plans, processes and measurement systems that form part of the management of buyer-supplier relationships.
- On the positive side, many initiatives regarding the optimization of the supply base, the management of supplier relationships, and the integration of suppliers into the operational and value-creation processes, and the development of suppliers have been started. The opportunity exists for these companies to further develop these initiatives, by paying specific attention to involving suppliers.
- A strong recommendation about current Ganaga Platino project is that construction company should not only react toward suppliers when something goes wrong, but communicate proactively with suppliers to develop closer and trusting relationships.
- Three main stages of work are involved; (i) Developing a trust framework; (ii) operationalizing the trust framework into an inventory and (iii) validating the inventory.
- For the current project the inventory cost were carried out so that the importance of the particular material to actual cost of project can be determined considering carrying cost of each material.
- Construction firms and their suppliers should jointly analyze processes and integral cost to reduce costs linked to failures and improves the quality of the final product. By involving suppliers in value creation projects, construction companies can maximize their use of the knowledge of suppliers in developing new products, processes, or services.
- Furthermore, on the basis of their analyses with purchasing models of the supply base, they should develop differentiated strategies toward their suppliers. Taking the large potential for improvements in the management of the buyer-supplier

relationship by Indian construction firms as a starting point for further research, the optimum relationship types, between contractors and suppliers in the construction industry, should be determined through further research.

- If a portfolio of relationships is developed, on the basis of the appropriate management styles, the competitive advantage of construction firms will increase.

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