

Study On Construction Sector Players in Developing SCM

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ABSTRACT

Supply chain management (SCM) has become a fundamental element in the construction industry to improve the efficiency and productivity in recent decades. The construction sector players includes contractors, suppliers and clients have major roles in establishing and developing SCM. It appears that construction supply chain management (SCM) is still at its infancy, many barriers still need to be overcome. The optimum efficiency and productivity in the construction industry were to be sought by resolving the top critical factors affecting SCM concepts. In this study, the relationship between contractors, their suppliers and clients has been investigated by a questionnaire survey to reveal the degree of importance of SCM from the point of view of contractors. This paper suggests that although construction practitioners have some knowledge of SCM they need a better conceptual understanding of it and new and more systematic approaches to its implementation.

Keywords: construction sector players' relationships, contractor's perspective, barrier rankings.

1. INTRODUCTION

Any construction project depends upon having the right people with right skills and equipment that are able to deliver the project on time and on budget. Having the right materials in the right place at the right time is equally important. A good materials management system will lead to benefits for construction productivity.

Supply chain management is one of the most important solutions for improving productivity and efficiency and preventing wastage of time and cost. Planning and controlling of raw materials, components and finished products are some obstacles in supply chain management. The term supply chain describes the supply system from raw materials to goods fixed in place. The linkage is between printed documents, purchases orders, receipts, invoices and emails which outline the specification, contract terms and delivery and customer details. The need for detailed information reflects the trust and relationship between the parties in the supply chain. An effective supply chain result to an efficient and productive project. Therefore it is essential to focus upon the people, the systems and process and how technology can help to improve the performance of the supply chain.

2. OBJECTIVE

To identify the barriers affecting the relationships of suppliers, clients and contractors in establishing supply chain management in the construction industry, through a questionnaire survey and to provide suggestion and recommendation for successful supply chain management. This study presents the understanding and analyzing of Supply Chain Management (SCM) in the construction industries regarding the relationship between major contractor companies and their suppliers and clients with a view to come up with certain implications for optimum construction performance.

3. OVERVIEW OF SUPPLY CHAIN MANAGEMENT

The whole chain from producing a raw material to selling the product to the firm i.e. a retail merchant is ascribed as a supply chain. Several companies take part in an organization for creating a product and transmitting it to the end user. **Chopra and Meindl (2007)** described the supply chain as consisting of the parties who are involved in satisfying the customer demands. The members of supply chain are not limited to the manufacturers and suppliers. Ware houses, retailers, transporters and customers are all players of supply chain. **Mentzer et al. (2001)** listed several activities which should be established by firms to behave consistently with the SCM philosophy. In this research, the focused activities are; integrated behavior, mutually sharing information, cooperation and partners' building and maintaining long-term relationships. Integrated behavior and cooperation with clients and suppliers are highly recommended to meet mutual expectations in the long-term (Mentzer et al., 2001). Partners' building and maintaining long-term relationships are required for increasing the effectiveness of SCM (Mentzer et al., 2001). **Lee (2004)** suggested that "collaborative relationships should be developed with suppliers and customers so that companies work together. **Vrijhoef and Ridder (2007)** pointed out that the difference of SCM in construction industry from the other industries occurs at the end-customer stage, since clients are involved in the chain both at the start and at the end for construction projects. This nature of construction industry evolves significant problems such as lack of communication, lack of knowledge sharing infrastructure, which are obstacles the improvement of SCM in construction.

4. STUDY METHODOLOGY AND SAMPLE COVERAGE

Survey questionnaire is a measurement tool to find out the opinions of a specific group about a certain subject. Since the needs for accurate and prompt flow of information has become very critical, surveys are used to gather information from a sample of individuals. The questionnaire study was designed by the implications studied in the literatures collected. The questionnaire was designed to replicate three previous studies by P.E. Consulting (1991, 1994, 1997) about collaboration in the retail supply chain: "Long Term Partnerships- or Just Living Together" (1991); "Supply Chain Partnerships-WhoWins?" (1994); and "Efficient Consumer Response -Supply

Chain Management for the New Millennium” (1997). The present questionnaire explored the upstream and downstream supply chain identified by Jones and Saad (1999). The degree and quality of the relationship between the members of supply chain in construction sector, including contractors, suppliers and clients, is one of the main factors to determine the level of achievement of SCM. That’s why the questionnaire form was majorly based on the relationship among these players to measure the success of supply chain strategy of contractor firms. The questionnaire form was created based on the 5-point Likert scale; ‘5’ refers to “very important” or “very strong” or “strongly agree” or “high extent” and ‘1’ refers to “unimportant” or “very weak” or “strongly disagree” or “low extent”.

In conclusion, the questionnaire form was designed for contractor companies to display management’s understanding of the concept and its effectiveness for practical application in construction industry.

5. SAMPLE DESIGN

The questionnaire forms sent to the contractors via email using online survey software program. Each e-mail text included consent form explaining the reason of my survey study. If the receiver accepted to participate in this survey, ‘start survey’ link was followed. In response to the initial 150 questionnaires issued, 44 replies were received after a six-week period. From the list of 106 contractors that had not replied, a random selection of 80 contractors was made and a reminder sent with a two-week deadline for a response. Overall, 74 positive replies were received. Hence the overall factors affecting the material supply chain is found by its mean impact.

Table1.Results of level of mean impact factor

SI NO	RESULTS OF LEVEL OF MEAN IMPACT FACTOR		
	Barriers between suppliers, clients and contractors	Mean Impact	Rank
1	Retention between suppliers and clients.	3.1	1
2	Trust	3.075	2
3	Inventory	3.05	3
4	Transportation	3	4
5	Market price/WPI (i.e)price fluctuations	2.975	5
6	Reliability of supply	2.975	5
7	Purchasing	2.925	6
8	Traditional contracts do not engender good	2.9	7

	working relationships		
9	Late and incorrect payments	2.875	8
10	Lead time	2.85	9
11	Location/Government policies	2.825	10
12	production planning	2.8	11

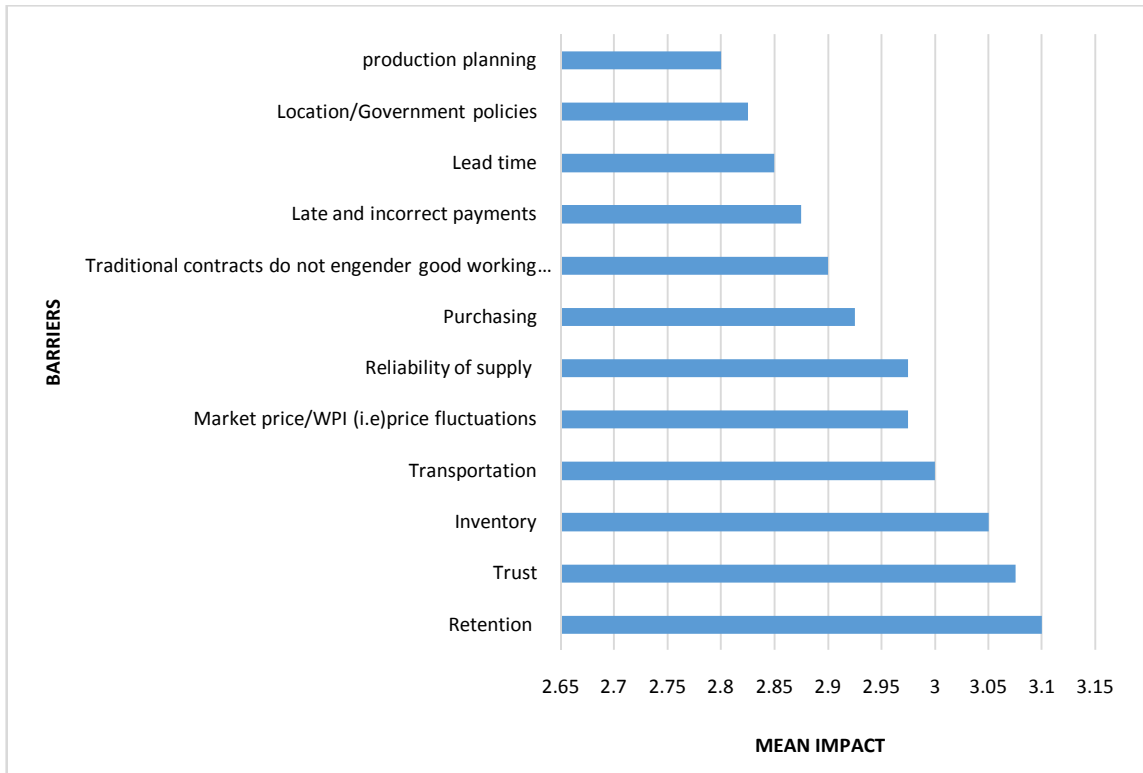


Figure1: Barriers between the Suppliers, Clients and Contractors

6. CONCLUSION

The nature of construction industry (its fragmented and adversarial structure) prevents the suitable implementation of supply chain and inhibits developing of SCM organization in construction industry, barriers existing during enhancing the industry were asked to figure out the common problems of the constructors. ‘Retention’, ‘Trust’, ‘Inventory’ were ranked as the biggest barriers. These are all caused by traditional management method which causes cumbersome structure and stimulate the unreliable environment for the construction industry. Determination of common

problems might provide taking precautions on the whole sector and diminish the obstacles for implementation of optimal supply chain performance.

REFERENCES

- [1] Vrijhoef, R., and Ridder, H. (2007). "A Systems Approach for Developing a Model of Construction Supply Chain Integration." *Proceedings, 4th Nordic Conference On Construction Economics And Organization, Development Processes In Construction Management*, Sweden, 6-17.
- [2] Vrijhoef, R., Koskela, L. and Howell, G. (2001). "Understanding Construction Supply Chains: An Alternative Interpretation." *Proceedings, 9th Annual Conf. Int'l. Group for Lean Construction, IGLC-9*, Blacksburg, USA.
- [3] Chopra, S., and Meindl, P. (2007). *Supply Chain Management: strategy, planning, and operation*, 3rd ed., Prentice Hall, NJ.
- [4] Dubois, A. and Gadde, L. (2000). "Supply Strategy and Network Effects-Purchasing Behavior in the Construction Industry." *European Journal of Purchasing & Supply Management*, 6(3-4), 207-215
- [5] Wong, P. S., and Cheung, S. (2004). "Trust in Construction Partnering: Views From Parties of the Partnering Dance". *International Journal of Project Management*, 22(6), 437-446.