

Need for Supply Chain Management in Multi Storey Building Construction

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Abstract

The Construction Industry in the country, which was thoroughly shaken by the demonetisation, has come back to its full strength now. The builders are also showing keen interest in total compliance with RERA.

The purchasers are very particular that the apartments they buy must have good quality and conform to all statutory regulations. The price aspect is no longer a constraint, given the overall income levels of people. Another important thing is that the availability of institutional finance, for a longer period of time, attracts the youngsters and the urbanisation has necessitated that an own dwelling place is a must.

The city and the outskirts are once again seeing the boom of construction.

Key Words

Supply Chain Management, Vendor Evaluation, Rate Contract, Total Quality Management

Background of the Research

The construction industry is contributing in a good measure to the GDP of the country. In fact, its contribution is increasing steadily, year after year as is evidenced by the below.

Year	GVA (Gross Value Added) Rs. In Crores
2011 – 12	777363
2012 – 13	847492
2013 – 14	919269
2014 – 15	977992
2015 – 16	1000459
2016 – 17	1064068

(Source: Ministry of Statistics and Programme Implementation, Planning Commission, Government of India last updated 21/03/17. Sector-wise Contribution of GDP of India – Statistics Times.com) [1]

Research Methodology

Personal visit to the site (in Chennai City), observation and discussion. Broad details of the site are as under.

Contours	Details
Number of site visited	One
Number of floors	12
Number of Site Engineer	2
Number of Supervisor/Site In Charge	6
Compliance with RERA/Statutory Regulations	100%
Facilities offered	Club House, Swimming Pool, A/c GYM, Party Hall, Super Market, Restaurant, ATM, 24 Hours Power Supply, Round the Clock Security

Why Supply Chain Management is Necessary?

For a small scale builder, the construction activities are minimal and the men and materials can be sourced at his place itself. He would also find it easier to continue with the same for convenience of operation.

The quantity of procurement being limited, he would not mind about cost but his only concern is local availability for purchase as and when needed.

This is not so with major builders who do construction activities at mega level. Their activities are termed “construction projects” with more than six floors. They undertake activities at least at two to three places, simultaneously.

All their requirements are at large scale and time bound. They are particular about “standardisation” in their construction activities. Whether it is Cement, Bricks or Sand or Steel, they use only a particular brand of same throughout their construction. The same brands are only used in all their projects.

This is the reason that they are very particular to have Rate Contracts with Suppliers. Their main concern is (a) unstinted supply of materials at the site (b) no compromise on quality (c) price should be firm throughout the currency of the contract.

In the small scale construction, competition amongst the builders is negligible. Each builder by himself being small is not much bothered about others. He is quite happy with his own small share of business in the field.

In the case of Big Builders, their levels of construction being too big and their customers are also being high profile ones, there is an inherent competition in vying with each other. They are aggressive in wooing customers with more benefits and luxury in their construction.

Their advertisement expenses are quite high. In a way, they are able to spend the money for advertisement from the savings they gain in Supply Chain Management. The profits they gain in SCM are being used as a buffer for advertisement. This is an off the record statement of the Senior Official at the site, during the desultory conversation.

Here, it is worthwhile noting the following.

“There must be some dimension in which the business has an advantage over its competitors. Doing as well as they do is not enough for forward strategy. Seeking, Creating and Sustaining visible distinctiveness on some market relevant dimension from the customer’s perspective is crucial”.

(Source: Pages 53 – 55. Book Name: Choosing The Future – The Power of Strategic Thinking. Author: Stuart Wells, Copy right@ 1998 Stuart Wells, Published by: Butter Worth – Heinemann, An Affiliate of Elsevier, 200, Wheeler Road, Burlington, MA 01803, ISBN: 0 – 7506 – 9876 – 4) [2]

Inventory is a Major Concern

In Big level construction, simultaneously taking place at many sites, it is to be noted that even small items are required in large numbers.

The cost of construction is already a big burden on the builders. The stark reality is that many mega builders are struck with cash flow as many of their projects, though completed, are yet to be fully sold out. The Apartments being “utterly luxurious” for high end customers, it is slow going.

While advertisements evoke interest in the minds of prospective buyers, they are easily toyed with the glib of Ads from various equivalent builders. This eventually results in delay in choosing the Builder of their Choice. There are many apartments in many floors yet to be sold out. In marketing vernacular, they are goods unsold – having eaten away the material, labour and capital.

Maintaining their reputation is a major concern for them. They do not want to have any disturbing comments from any of their customers.

The best option available to them is to meticulously plan their requirements, for all their projects and work out the off take of the entire items. This gives them their requirement, items wise.

The Builder of the site is a Company of Repute and they are in the field for more than forty years. They have different departments with qualified staff.

All their activities are based on “Outsourcing” (barring their own minimum staff and labour). Both Men and Materials are outsourced. They have Rate Contracts with all their suppliers.

Before finalising the plan of procurement, the following important steps are to be carefully followed.

Lead Time Required: Nowadays, all suppliers are busy as they are contracted by many established builders. The production capacity at their end being limited and the demand is getting on the increase, they find it difficult in strictly adhering to the delivery commitment. The fact is that they are overbooked. At many times, marginal delays do occur, disrupting the site activities.

While this delay cannot be termed as a wilful renege of commitment, it is a case of genuine slip. Hence, it is quite necessary to know the lead time required for delivery of the materials. Planning activities must be initiated keeping this in mind.

Accuracy in projection: Once the materials are delivered, the clock ticks for payment. It is understood that they enjoy a credit period of 14 – 21 days from the date of delivery of the materials at the site. If the items are over received due to poor projection and kept piled up at the site, it only means that the benefit of credit period is nullified.

Alternative Supplier is a Must: All the large scale builders have at least two to three suppliers in their supplier base. Their off take is split in to them proportionately so that even if delays occur from one source, the work at the site can go on unhindered. One of the Senior Officials made a proud remark that their company never had a halt in the activities either for want of materials or money.

While the credit of money planning goes to the builder, the credit of material planning is shared by the dedicated staff of the Material Planning Department. This precise planning is one of the secrets for keeping their flag flying high in the field.

They use only a particular brand uniformly in all their projects. They are also not averse to using equivalent brands, only in the event of an exigency.

In this context, it is pertinent to note the following.

“Quantity and Time estimates for required materials should be plotted in to the future and compared with expected conditions and critical events or potential problems should be identified.

The Purchasing Executive can then provide realistic answers to questions such as what material alternatives exist? What alternative market and purchasing strategies may be possible”?

(Source: Pages 154 – 160. Book Name: Strategic Management for the XXIst Century. Authors: M. Reza Vaghefi and Alan B. Huellmantel, Published by: CRC Press LLC, 2000, N W Corporate Blvd, Boca Raton, Florida 33431, Copyright@ 1999 by CRC Press LLC, ISBN: 1 – 57444 – 210 – 4) [3]

Costing is Crucial on choosing supplier – equally important is his technical capability

The common feature of small builders is that they will choose to buy only from a particular source who give them maximum discount. They are, more than quality, cost conscious. The important feature of large builders is that they never make any compromise on quality. They would not mind even paying a higher price for the quality.

To avail the discount and the benefit of price consideration, they enter into Rate Contract with the Suppliers. Their mass purchase enables them command price concession and timely deliveries. One of the clauses of Rate Contract clearly specifies that in the event of any loss to the builder arising out of delayed delivery by the Supplier, such losses are to be compensated by them.

The clauses further say that any technical improvements suggested by the Purchaser (Builder) should be incorporated by the Seller (Supplier) subject to feasibility. This means that the supplier should have a matching technical know as is expected by the builder.

The construction activities today are more of technical than of human. The physical labour is greatly reduced and to a large extent mechanisation is adopted in almost, everything. The supplier should be able to incorporate any improvements in supply as required by the builder.

One of the officials at the site said that the Supplier who was supplying the traditional river sand is also now fully equipped to manufacture and supply excellent quality M Sand.

As the availability of river sand has become very scarce now, Government itself is popularising wide use of M Sand. The initial apprehensions of builders about the use of M Sand are greatly removed (though some have niggling doubts).

The major difference between small builders and big builders is that the latter always lays importance for quality and technology over trade discount. In fact, the suppliers they have are also equally competent enough.

One more thing to be noted here is that the Builder is having Rate Contract with two to three Suppliers whereas from the point of view of Suppliers, they have so many Purchasers (Builders) and hence, they are always concentrating on “continuous improvements” in their production and delivery process.

Their Technical Knowhow is superb and they can match with anybody’s requirement comfortably.

As the requirement of small builders is less and occasional, they are denied of such benefits which accrue only to established large builders.

The Suppliers who enter into Rate Contract with large scale builders are fully capable enough to incorporate any fine requirements of the Builder. There are suppliers who suggest improvements in building process, to the Builders. Such is their technical capability.

During the discussion, it was gleaned that there are suppliers who turn down the Rate Contract with Builders due to many reasons (such as the reputation of the builder, assured off take, payment issues etc.). This is only just to show that not all big builders can command Rate Contract with Suppliers.

As the big builders are concentrating on posh apartments with the state of the art technology in construction and comforts, their supplier standards are also matching with that of the builder.

It is quite relevant to note here, the following.

“The low cost supplier may have the advantage of high volume and solid profit margin but would face the major problem of obsolescence of technology and loss of high end customers to specialised firms”.

(Source: Pages 42 – 46. Book Name: Competitive Solutions – The Strategists Tool Kit. Author: R Preston McAfee, Copyright @2002, by Princeton University Press, 41, William Street, Princeton, New Jersey 08540. ISBN: 0 – 691 – 09646 – 5, ISBN: 13 – 978 – 0 – 691 – 12403 – 2 and ISBN: 10 – 0 – 691 – 12403 – 5) [4]

Points to ponder over before fixing SCM

There are a large number of Mega Builders now. In the construction field, any builder who builds more than 8 floors is considered to be a mega builder. The construction may be in one site or many sites.

Generally, the Mega Builders do construction in many sites simultaneously. This gives them ample opportunities to shift the materials to the place of emergency need, in the event of a delayed delivery. Mobilisation of labour is also planned in such a manner that no site starves for manpower at any point of time.

There are also equally so many suppliers who cater to the needs of mega builders. Before choosing a supplier, great deal of attention is to be paid by the builder. Though RC (Rate Contract) coverage is there, a problematic supplier is always a pain in the neck. Hence, the Builder should be very wary, at least on the following essential things.

- However big the supplier is, there should not be any litigation background. Some suppliers with excellent law council backup, will always be at loggerheads with the builder.
- He should have sufficient technical knowhow to incorporate any genuine and reasonable improvements that the builder wants to have in the products and services.
- The supplier should be fair in accepting liabilities and should be prepared for indemnities without a bite.
- He should be the absolute owner of the product being delivered by him.
- He must ensure total quality standards and be bound for the same.

The Builder visited, has an excellent team of dedicated personnel who are experts in drafting the agreements, attending both technical and commercial discussions and concluding the Rate Contract.

It is very necessary that knowledge is open to all. Both the Builders and also the Suppliers have legal counsel at their ends. What essentially matters is concluding the Rate Contract, clause by clause with diligent care and caution.

The RC must be fair to both. It must have the legal provision for coverage and compensation to both parties.

The agreement with supply chain management will get concluded only after all the points are thoroughly discussed and agreed upon.

There should not be any ambiguity in clauses or sub clauses. Period of settlement should be specified so that the case will not drag on indefinitely.

All these call for excellent negotiation skills. The person deputed for negotiation with the supplier (the same way, from the supplier to the builder) must have excellent negotiation skills.

The “negotiation skills” does not simply mean glib talk. The person attending the negotiation must have thorough technical knowledge, in depth understanding of commercial implications, absolutely honest in expression and expectations, quickly and quietly solving the conflicts arising out of the negotiations and above all an expert in concluding the negotiation to the satisfactory agreement to both.

Concluding the Agreement should be a ‘Win - Win Deal’ to both.

In this context, it is relevant to note the following.

“Negotiation has the excitement of the Chase, Conflict and Conquest. Take the negotiation seriously but have fun. He who is not excited by the prospect of a negotiation will not achieve the best result. He, who is fearful of the prospect will fail”.

(Source: Pages 211 – 212. Book Name: Successful Contract Negotiation. Author: Tim Boyce, Copyright @ Timothy Boyce, First Edition 2006, published by VIVA Books Private Limited, 4262/3, Ansari Road, Daryaganj, New Delhi 110002. ISBN: 81 – 309 – 0227 – 3

[5]

Plan Ahead and Be Proactive

The clauses and sub clauses of the Rate Contract may have been so finely drafted and agreed upon. But the real situation in construction, especially in larger projects, gives sudden shocks, at times. It will be very peculiar that legally, either party would have total protection but there will be a loss to the builder which has to be borne by him only.

The Senior Official at the site made an off the record statement that due to some internal lacuna, a peculiar problem cropped up. The Pre stressed concrete beams arrived whereas space allotted was filled with some other materials. Due to space constraint, the beams were sent back with a request to redeliver a couple of days later.

The supplier was perfectly right in delivering the item as per commitment. Owing to internal confusion, the beams were sent back. The Builder had to pay for the transportation and other incidental expenses for this.

Space management, especially in big sites, is a major thing. The peculiarity is that the supplier sent the items through his own trucks as per logistics agreement, labour at the site were ready to receive and store, but the storage space was not available, due to some confusion.

While the blame could be easily made on the Site Engineer, Site In Charge and others at the Site, the loss was to be borne only by the builder.

The Site Engineer and the people concerned at the site must be always alert in their planning, organising and executing the work properly.

Apart from materials and other goods to be received from various suppliers, logistics management at the site is also very essential. Logistics management encompasses very many things and not simply trucks alone.

While the supplier will send the items in his own truck, cranes must be available at the site to unload and store and this is the responsibility of the site in charge. Unloaded items must be kept safely either at the godown or at the apportioned place. Normally, the site personnel slip mainly on this.

Small items can be accommodated wherever space is available at the site. What about concrete beams or steel rods?

The executives handling SCM must be fully aware of all these aspects as the supplier will be responsible only for his deficiencies and not for the inefficiencies of the site personnel.

In this, it is quite relevant to note the following.

“Procured items are usually classified as Goods, Work and Services (GWS). Goods represents raw materials or produced items, Work means Contract Labour and Services means consulting. To simplify, we lump them together and refer to them as procured GWS.

Planning, Budgeting, Scheduling and Follow up Control of these items fall under the heading Procurement Management”

(Source: Pages 187 – 190. Book Name: Project Management for Business, Engineering and Technology – Principles and Practice 3rd Edition. Authors: John M Nicholas and Herman Steyn. Copyright © 2008, Elsevier Limited. Published by: Butterworth – Heinemann (is an imprint of Elsevier), The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, 30 Corporate Drive, Suite 400, Burlington, MA 01803, USA. ISBN: 978 – 0 – 7506 – 8399 – 9)

[6]

Conclusion

Big builders invariably enter into Rate Contract for Labour and Materials. They have, at all times, more than one supplier delivering the items.

They use only specific brands of items in construction and no compromise is made on this under any score. Under exceptional situation only, comparable items will be permitted.

They have their own minimum permanent staff which comprises Engineers, Finance Executives and Logistics Executives besides a reasonable number of staff and labour.

Movement of men and materials amongst different sites is followed. This is only for emergencies and exigencies.

Considering the volumes, they command price concessions and also credit period.

They have a thorough Total Quality Management and also insist on the same with their Suppliers. Quality and Timely Delivery are their strength. Perhaps, their dominance in the field is due to this.

Their vendor selection criteria are very stringent. Hence, their suppliers are also equally commendable in reputation, quality and delivery.

Recommendation

Site personnel must show military alert, particularly at big projects.

Besides Co-ordination with Suppliers, continuous contact and monitoring with others – Crane Suppliers, Consultant, Space Management, Safety aspects and Housekeeping are also necessary.

Artificial Sand is an ideal substitute for River Sand which is getting scarcer of late.

Cement should be stored in Godown only and not kept outside, though closed by polythene covers.