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Recipé for setting up capacity in the Indian Cement Industry – acquisition, integrated unit or split?

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ABOUT THE AUTHOR

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1.0 ABSTRACT

The fortunes of the Indian Cement Industry seem to be on an upsurge. There has been a significant decline in the capacity-demand gap and prices too appear to be hardening. Capacity augmentation plans, after a period of relative somnolence, suddenly seem to be attracting considerable interest.

Several options are available for significant capacity augmentation. The ones, most common, include:

- Acquisition
- Adding brownfield capacity – integrated (uni-location) and/ or split
- Adding greenfield capacity – integrated (uni-location) and/ or split

For a particular manufacturer, the preferred option, or a combination thereof, depends not only on expectations of the future industry scenario but also upon manufacturer-specific criteria such as target market shares, projected financial outcomes, availability of finance, gestation period for capacity increase, etc.

This paper discusses a phased methodology to choose the most appropriate option. The phases suggested include:

- Analyzing market attractiveness.
- Assessing presence in attractive markets.
- Optimizing distribution.
- Identifying and selecting acquisition targets.
- Deciding between integrated plant(s) and split unit(s).
- Budgeting investment for capacity augmentation.

2.0 EMERGING INDUSTRY SCENARIO

Prior to a discussion on the methodology it is useful to summarize a macro-perspective of what possibly could constitute the industry scenario in the foreseeable future:

- Cement demand to grow at a growth rate of 8-9% pa over the next 5 years. These growth rates would differ between regions.
- Exports amounted to 9 mio t in FY04 (cement and clinker converted to cement). With the demand boom in the Middle East likely to continue for some time, these are likely to grow to a level of 10-12 mio t over the next 5 years.
- At present 9 companies control nearly 70% of the effective capacity. In the next 5 years 7-8 companies could control nearly 80%.
- Industry consolidation and increasing market demands could lead to an increased focus of efforts in value added products like RMC, Cement Products, etc.
- Since the demand supply gap is expected to narrow, leading to a possible balanced situation in 2008, prices could firm up till additional capacities come on stream.
- International cement majors are expected to buy out large capacities in order to either expand their stake or gain a direct entry into the large Indian cement market.
- Without affecting manufacturer margins, the proposed implementation of VAT, particularly in states that have multi-point taxes, could lead to a downward pressures on retail prices and consequent consumption increase.
- The share of blended cement would increase as clinkerisation capacities get constrained and the government's policy on proliferating the use of fly ash is implemented with greater urgency.
- With steel manufacturing capacity being significantly added, the availability of slag and its use as a blending material in cement, is also likely to increase.
- The bulk mode of cement dispatch is expected to increase as road infrastructure improves and the institutional segment of the market grows in relation to the housing segment.
- The incremental gains from capacity de-bottlenecking and cost optimization exercises are likely to saturate.

Taking into account the above likely scenario, capacity augmentation measures must be customized on a case-to-case basis to attain the following strategic objective:

"**Locate augmented capacity so as to attain market dominance within the shortest possible time at the least investment and operating cost**".

3.0 FRAMEWORK FOR THIS PAPER

Customization being of paramount importance, this paper assumes a hypothetical framework in which, a leading industry player, with an All India supply and market presence, is seeking to augment capacity in consonance with the above strategic objective.

4.0 METHODOLOGY

A 6-stage approach is suggested towards the realization of the above strategic objective:

- Analyzing market attractiveness.
- Assessing presence in attractive markets.

- Optimizing distribution.
- Identifying and selecting acquisition targets.
- Deciding between integrated plant(s) and split unit(s).
- Budgeting investment for capacity augmentation.

A recipe, of how these stages need to be executed, is explained in the sections that follow.

4.1 Analyzing market attractiveness

For the purpose of this analysis, the country is divided into sub-states, where each sub-state consists of a collection of districts. Such a division is made in order to have a manageable number of markets for analysis, without losing out on the character of the market. Analysis, at a district level, makes the number of markets unmanageable, while analysis, at a state level, being too macro in nature, does not yield sufficiently meaningful results. This division into sub-states takes into account the geographic contiguity of the districts and the supply pattern that is followed.

For each sub-state, two indicators need to be simultaneously considered, in order to derive its relative attractiveness as a market. These are Consumption Density and Supply Intensity.

Consumption Density (CD) is a measure of the intensity of demand distribution in a particular market (sub-state) and is expressed in terms of tons per sq km. A higher CD implies a higher intensity of demand and, by itself, connotes higher prices.

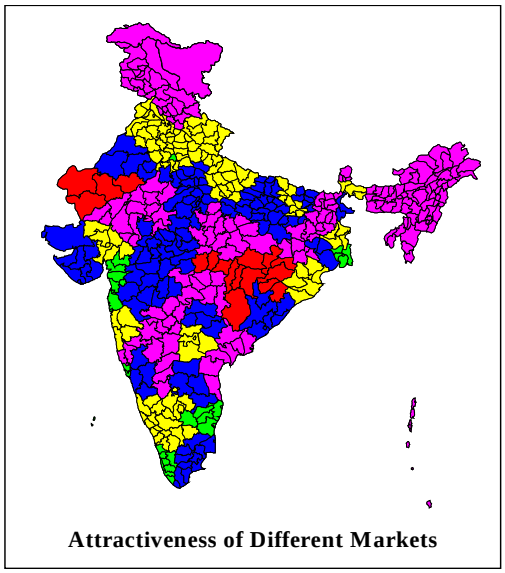
Supply Intensity (SI) is the measure of the propensity of the player to supply a market (sub-state). It is measured in terms of tons per rupee of delivery cost from the supply point to the market. The SI of a market is the summation of the SI's due to the various players supplying it, weighted by their respective contribution to the total supply to the market. Markets with higher SI generally tend to exhibit lower price levels.

Attractive Markets are those, which not only have a high consumption base but also have a low supply pressure. In other words, markets that have high CDs and low SIs are more attractive. Possible combinations of CDs and SIs are mapped into distinct attractiveness categories. For example, these categories could be - **most attractive**, **attractive**, **average**, **low attractive** and **least attractive**. The following matrix shows the manner in which CDs and SIs of a market can be combined to classify markets. The clubbing is necessitated by the need to have a manageable number of classifications. At the same time, care needs to be exercised to ensure that the essential characteristics of a market are adequately reckoned.

		CD				
		Very Low	Low	Average	High	Very High
SI	Very High					
	High					
	Average					
	Low					
	Very Low					

Attractiveness Category	Legend
Most Attractive	
Attractive	
Average	
Low Attractive	
Least Attractive	

The map of India shows the relative attractiveness of different sub-state markets as derived using the CD - SI methodology. It must be understood that the map is a snapshot, obtained at a certain point of time. Demand - supply forecasts must therefore be used to derive time-transitions of such a mapping since a meaningful strategy for capacity augmentation can only be formulated only after considering futuristic snapshots of the map.



Attractiveness of Different Markets

4.2 Assessing presence in attractive markets

Markets that fall in the very attractive, attractive and average categories may be identified as relatively **good markets**. The presence of the player, for whom the capacity augmentation exercise is being carried out, would need to be assessed in these markets.

A high market presence may be taken as one where the combined market share of the various plants belonging to the player, exceeds 20%. Medium presence markets could signify shares between 10-20% while low presence could imply shares below 10%.

The capacity augmentation strategy would be targeted towards:

- Consolidating presence in the **high presence markets**.
- Enhancing presence in the **good markets** where the presence is currently either medium, or low.
- Possibly diluting presence in the **not-so-good markets**.

4.3 Optimizing distribution

The objective of this exercise is to examine whether the current geographic distribution is optimal and if not, how it can be possible modified to improve realization (revenues less delivered costs). The optimized distribution would then form a starting point for the overall strategy of enhancing presence in good markets.

A possible way of optimizing distribution is to use the **Competitive Advantage - Market Attractiveness** (CA - MA) methodology. CA is computed for a market and measures the relative competitiveness of the individual players in the market. On the other hand, MA refers to the relative attractiveness of different markets to a particular player. Both, CA and MA, use realization (price less freight, sales & other taxes and duties, other marketing/ inventorying expenses, excise duty and cost of production) as a basis for calculation.

CA, for a player in a market, is a ratio derived by dividing the realization of the player in a particular market by the average realization in the market. MA, for a market, is also a ratio, derived by dividing the realization achieved by a player in a market by the average realization achieved by the same player in all accessible markets.

The CA-MA methodology uses these values of CA and MA to algorithmically derive **achievable market shares** for a player in all accessible markets. Market shares thus derived, are subjected to reality tests and strategic interventions to derive realistic figures. These are then compared to the actual shares. A new distribution plan is then derived that is more optimal than the one currently prevalent. The new distribution plan does not only indicate the volumes in each market but also specifies which particular operating unit(s), belonging to the player, be used as supply sources. Since re-distribution does not require significant investment, it is important to conclude this exercise prior to taking irreversible and capital-intensive decisions about capacity augmentation.

4.4 Identifying and selecting acquisition targets

Acquisition of existing cement plants/ those under execution is possibly one of the fastest and cheapest ways to augment capacity. It however needs to be targeted towards enhancing the presence of the player in **good markets**.

The first step in this is to determine **future market shares** in the **good markets** on the basis of demand - supply projections across a time frame. In the computation of these shares, the results of the distribution optimization exercise must already be taken into account. Subsequently, values must be established for **target market shares** in light of the norms established earlier for market presence. Thus, target market shares exceeding 20% would indicate high presence and thus typically dominant positions. The differences between target market shares and future market shares could be reckoned as **aspiration gaps** that would need to be covered through augmented supply.

The next step in the exercise is to develop a longlist of all possible acquisition targets. This list is based on the location of potentially acquirable, operating/ gestating units vis-à-vis good markets, in which aspiration gaps have been identified. From the longlist a shortlist is to be subsequently developed, based on the following criteria:

- Competitive advantage scores of these units in **good markets**.
- Sustainability of the raw material resources including limestone, correctives, additives and fuel.
- Availability of adequate general and logistical infrastructure.
- Vintage and adequacy of equipment and technology.
- Performance parameters currently attained.
- Financial condition
- Attitude of the current owner(s) towards divestment.

Based on these criteria, by following a combination of the future earnings method and the asset valuation method, **investment estimates for acquisition** could be worked out for the shortlisted candidates.

The market share contribution of different combinations of acquisition, in covering the aspiration gap, can then be studied to evaluate whether the investment is objective driven.

The following example is being provided as an illustration of the methodology:

Group	**Capacity mio tpa**		**Projected Market Shares after 5 years for Possible Acquirers (%)**					
			M1	**M2**	**M3**	**M4**	**M5**	**M6**
Group 1	3.5		5	7	12	10	33	15
			Aspiration Gaps i.e. Shortfall from 20% (%)					
			15	13	8	10	0	5
Plant	**Capacity mio tpa**	**Investment US $ mio**	**Projected Market Shares after 5 years for Acquisition Candidates (%)**					
Plant 1	0.7	8	1	8	0	6	0	0
Plant 2	1.5	58	5	0	0	0	2	0
Plant 3	1.2	73	1	0	8	15	17	0
Plant 4	2.1	104	1	5	8	10	4	6

From the above table it can be seen that acquisition of Plant 4 would enable the acquirer to nullify the aspiration gap in all markets other than Markets M1 and M2, where uncovered gaps of 14% and 8 % would still prevail. Combinations of acquisitions would therefore need to be considered.

In case there are multiple options that enable the bridging of aspiration gaps, the additional realization per US $ of investment cost may be used as a criterion for choice. For this, the unit realization, and the market size for each market would need to be estimated.

4.5 Deciding between integrated plant(s) and split unit(s)

Having completed the exercise on acquisition, the resultant uncovered gaps in **good markets** are apparent. These can be targeted either by expanding capacity in existing units (brownfield) or by creating capacity at new locations (greenfield). In both the cases, an associated question arises. Would it would be more prudent to set up the clinkerisation capacity and its equivalent grinding/ packing capacity at the same location (integrated unit) or whether there is set up capacities, downstream of clinker, at different locations (split units). An exercise termed as **Locational Analysis** can be employed to resolve this issue.

A possible methodology for conducting such an exercise is described below:

- The first task would be to map the markets which have uncovered gaps and determine the following characteristics for these markets:
  - Volumes.
  - Product mixes.
  - Prices.

  Let us assume such a market, “M”.

- In case these markets consume significant volumes of blended cement, the next task would be to map blending material (generally flyash and/ or slag) sources, most proximate to these markets and determine the following characteristics for these sources:
  - Uncommitted volumes.
  - Quality characteristics of the blending material(s).
  - Available sites in the vicinity of the blending sources, or between these sources and the markets, where a grinding unit(s)/ packing units(s) can be set up.
  - Details of these sites, required for estimating investment/ operating costs. Particular attention needs to be paid to the availability of incentives for locating such a unit. This could be in the form of Sales Tax benefit, Transport Subsidy, etc.

  Let us assume two such sites, “S_1” and “S_2”, which are proximate to both the uncovered market and a possible blending source.

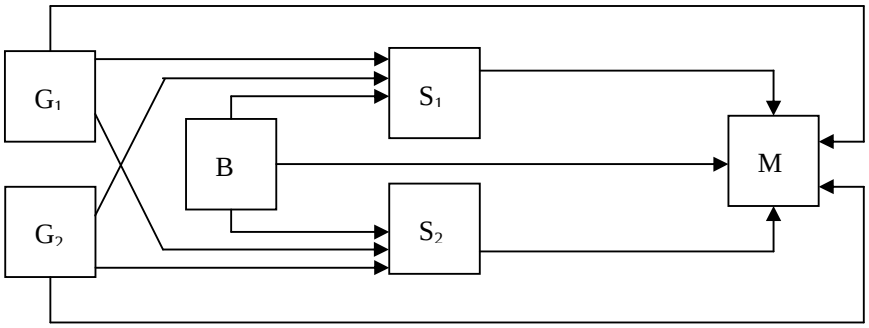
- Subsequently, it would be necessary to determine whether the company has any operating unit(s), logistically proximate to these potential markets/ blending sources, in which capacity can be augmented to that required by the volumes demanded by the uncovered market gaps. If so, **brownfielding**, with its lower investment costs, could be a possible option.

  Let us assume a possible brown field location, “B”.

- In case proximate units are not available, greenfielding would constitute another option. Should the markets be amenable to blended cements and should blending sources and blending sites be available in their vicinity, the greenfield option, would in all likelihood, need to be split. This would mean that the clinkerization capacity would not be equal to the grinding capacity at the greenfield location.
- In order to determine probable greenfield locations, a mapping of possible limestone sources would need to be done. For these limestone sources, the following key information would need to be collected:
  - Reserve volumes.
  - Quality characteristics.
  - Mineability including recovery ratios.
  - Mineral Concession Status (PL/ ML obtained or applied for).
  - Details (including those facilitating investment/ operating cost estimation) of possible locations proximate to acceptable limestone sources where a greenfield unit can be set up.

  Based on the above information, let us assume two possible greenfield sites, G_1 and G_2 where clinkerization and full/ partial downstream unit processes can be established.

  Locational mapping of the options available can be then done as shown below:



- It may be remembered that there while there are only 3 clinker sources (located at G_1, G_2 and B) there are 5 cement sources (located at G_1, G_2, B, S_1 and S_2). The combinations thereof, that would need to be subjected to financial evaluation are therefore:

  (G_1M), (G_1S_1M), (G_1S_2M), (G_2M), (G_2S_1M), (G_2S_2M), (BM), (BS_1M), (BS_2M)

  Assuming that revenues would be equivalent, investment costs, operating (production plus delivery) costs, time frames and returns of each of these nine combinations can be worked out. This would help in determining, not only which option is financially the best and has the fastest gestation, but also a priority ranking of all the listed options. Such a prioritization becomes specifically important when one option, by itself, is insufficient to attain the target values of market shares.

- Further complexities that could be considered for evaluation include:
  - Differential capacities
  - Differential product mixes
  - Soft factors (with appropriate weightage), that are difficult to evaluate in financial terms such as management control, operational synergies, site/ option related risks, etc.

- For the sake of simplicity, only one market cluster "M" has been considered in the example listed here. An exercise such as this can be easily extended to all the regions/ markets in which a player is interested.

4.6 Budgeting investment for capacity augmentation

Three steps have been suggested to attain dominant positions in **good markets**. These include:

- Optimizing distribution.
- Making acquisitions.
- Setting up new brownfield/ greenfield capacity, integrated or split.

Each of these has its own investment and operating cost. Assuming target values for market shares in specified markets (which would depend on the aspiration level of a player), it is possible to determine the total budgetary investment required, to attain these targets. In addition, it would also be possible to determine the returns from this investment. On account of the fact that each investment decision can be prioritized, it is also possible to decide which investment decisions are most prudent in case the player is operating within a fixed investment budget.

5.0 CONCLUSIONS

The exercise described in this paper, targets the ostensible objective of

- *Locating capacity augmentation, so as to*
- *Attain market dominance, in **good markets***
- *With the most optimal investment, in order to*
- *Get the best realization, within the*
- *Shortest possible time*.

Such exercises normally form an essential component of Corporate Strategy building. On account of the holistic approach and a target driven objective, these help in precluding brainstormed solutions that are normally subjected to techno-economic feasibility.

Given the irreversible consequences of investment decisions, it is strongly recommended that companies/ groups in the industry, aspiring for sustainable leadership, adopt approaches such as these, to ensure that all investments in capacity augmentation, are objective driven and ensure the best possible returns.