Institute for Advanced Studies in Complex Choices

Creating Competitive Advantage through Asset Architecture

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Identification of Issue

Name	Face Value INR	Price INR	M – Cap INR Crore	Installed Capacity Million Ton	M-Cap per tone of Capacity INR/Ton
NP1: Player 1	10	1493	28046	30	9349
NP2: Player 2	2	238	36943	29.65	12460
RP1: Player 3	10	15860	55193	25.6	21560
NP3: Player 4	10	3706	101700	87.5	11620

Cost of New Project 130 – 150 USD / Ton, i.e. INR 8710 – 10500 per ton

1. **NP1, NP2, and NP3 are pan India players, while RP1 is a regional player.**
2. **Valuation of RP1 is almost 2 times higher than the valuation of above players.**

Note: 1 USD = INR 67

Strategic Questions

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Cost of New Project 130 – 150 USD / Ton, i.e. INR 8710 – 10500 per ton

Strategic Questions

1. What could be the reasons of such a distinctly higher valuation of RP1? Does it enjoy any competitive advantage? If yes, from where does this advantage come?
2. Is this competitive advantage sustainable? For how long RP1 can continue reaping the benefits?
3. If this advantage is location/asset specific how could RP1 leverage this to grow the business further?

Note: 1 USD = INR 67

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Part 1

External Strategic Context

- **External Factors Analysis**
- **Industry Level Analysis**

External Factors Analysis 1/3

Market Factors	
Market Size	
Market Growth Rate	
Cyclicality	
Price Sensitivity	
Seasonality	
Industry Profitability	

Highly Negative
Negative
Somewhat Neutral
Positive
Highly Positive

- Indian cement industry is the second largest after China.
- Installed capacity is ~400 MTPA.
- Demand is ~300 MTPA.
- Per some estimate demand could reach up to ~550-600 MTPA by 2025.

- Demand growth rate strictly follows GDP growth rate.
- From Demand – Supply perspective country is divided into 5 regions – North, Central, East, South and West.

External Factors Analysis 2/3

Social Factors	
Demographic Changes	
Urbanization	
Migration	
Ecological Impacts	
Consumer Protection	

Highly Negative
Negative
Somewhat Neutral
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Highly Positive

- Broadly demand share of these regions are – North (~18%), Central (~17%), East (~19%), South (~26%) and West (~20%).
- These regions are at different level of developments and have different priorities.
- Therefore, regional consumption growth rate varies.

- In India Housing is primary demand driver (~60%, rural ~40%, Urban ~20%), followed by Infrastructures (~30%) and Commercial & Industrial (~10%).
- It indicates that Indian market is "**bagged**" driven.
- In such a market Brand creation pays, despite the fact that cement is a commodity and globally brands are not created.

External Factors Analysis 3/3

- Favorable macro economic factors and Governments' policies push viz. ***Housing for all, Swachh Bharat, Better Infrastructures and Economic Corridors*** are positive for cement demand.
- It is a low value density product and therefore there is no threat to industry because of global trade.
- Technology is pretty matured and not a barrier to the entry.
- Investment requirement is also modest at ~150 USD/Ton.

Economic Factors	
Government Push	
Currency Fluctuation Impact	
Protection	
Regulation	
Taxation	
Inflation	

Technological Factors	
Complexity	
Maturity	
Patents	
Voaltility	
R&D Requirement - Product / Process	

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Summary - External Factors Analysis

Market Factors	
Market Size	
Market Growth Rate	
Cyclicality	
Price Sensitivity	
Seasonality	
Industry Profitability	

Economic Factors	
Government Push	
Currency Fluctuation Impact	
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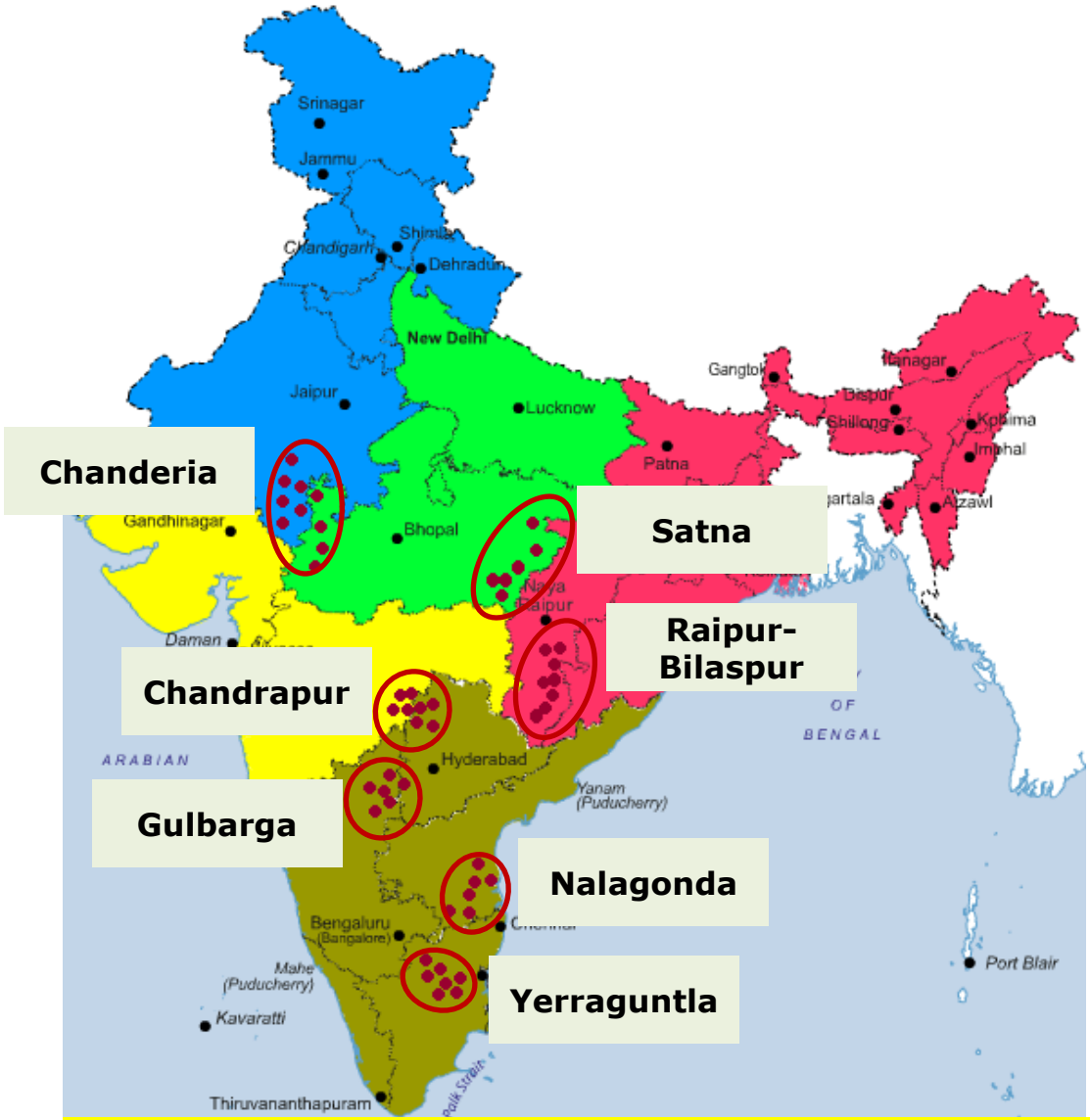
Part 1

External Strategic Context

- External Factors Analysis
- **Industry Level Analysis**

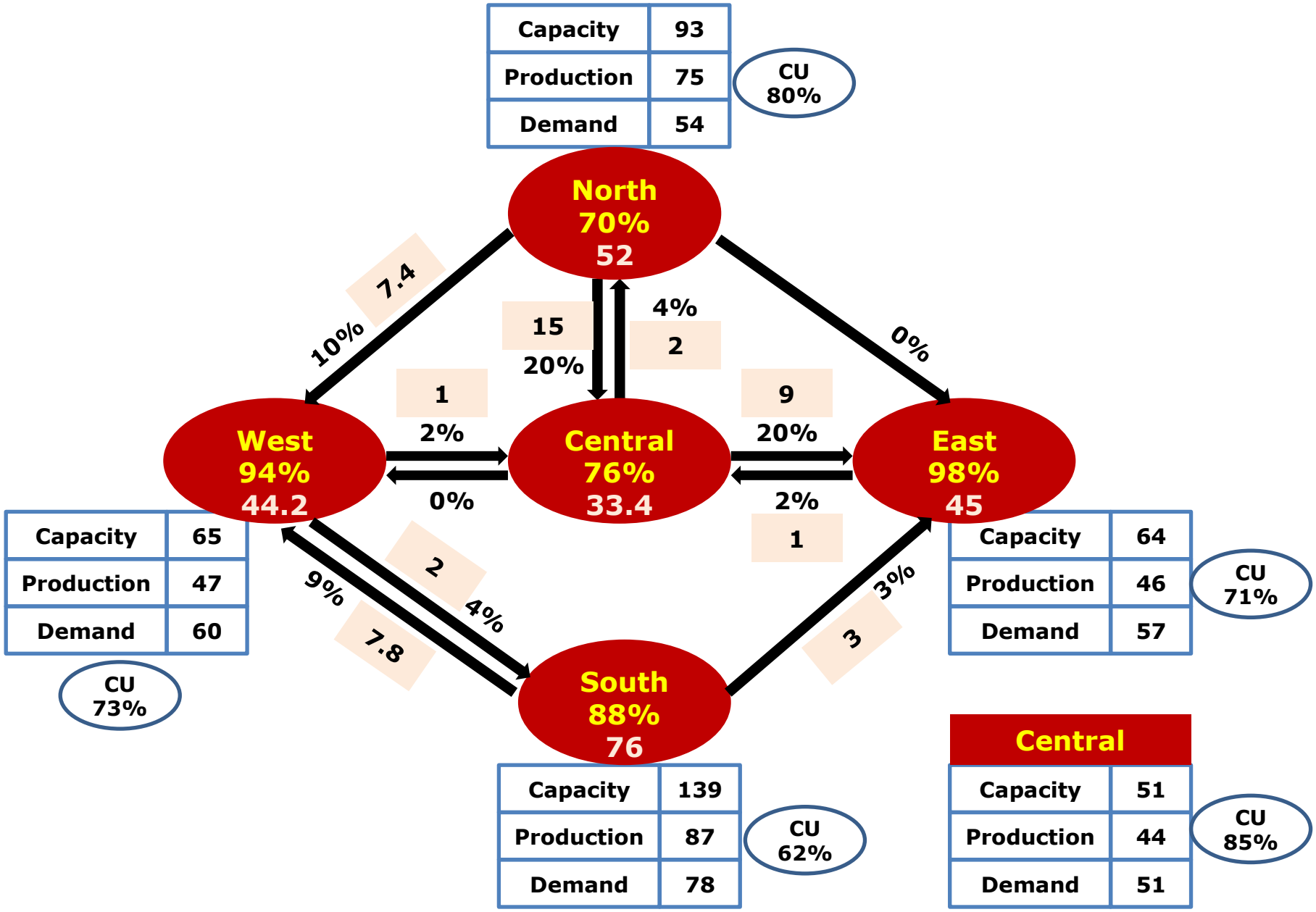
Concentration of Clinker Units



- Though limestone is available across the country, based on concentration of lime stone industry is divided into 7 clusters.
- Almost half of the clinker capacities are in these clusters.
- All clinker plants have captive limestone mines.
- Open bidding/auctioning of mines is allowed under MMDR Act 2015.
- Separate GUs are set up closer to the market with availability of fly ash.

Note: **Earlier mines were allocated under 'old' policy guidelines. Lease period of captive mines allocated under 'old' guidelines is extended to 31st March 2030 or completion of renewable period whichever is later.**

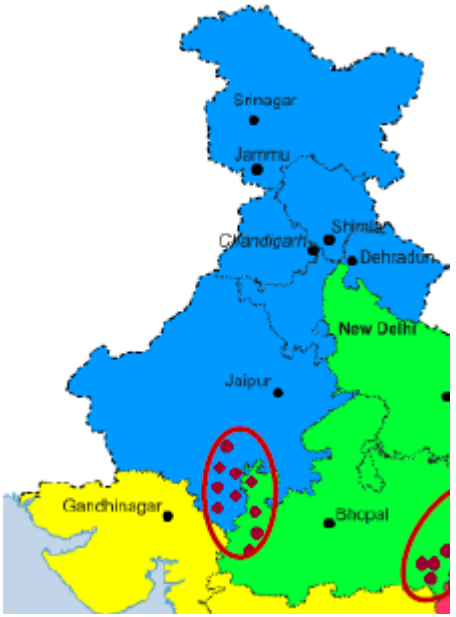
Inter regional movement of Cement 1/4



Inter regional movement of Cement 2/4

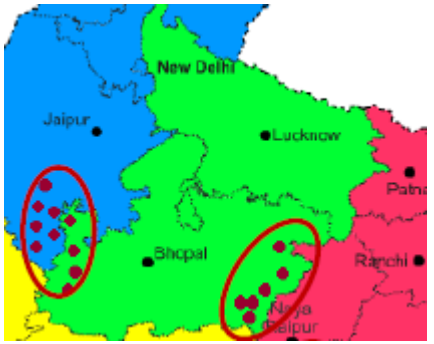
North

- Facilities are basically in Rajasthan and Himachal.
- Rajasthan players target the markets of North Gujarat, South Gujarat, and Western UP apart form Northern region.
- Shree Cement is the main player in the region. Other significant players are Ultratech and Ambuja.



Central

- Facilities are basically in Satna cluster.
- Players target the markets of Eastern and Northern regions.
- Ultratech, Prism and Heidelberg are the main players.

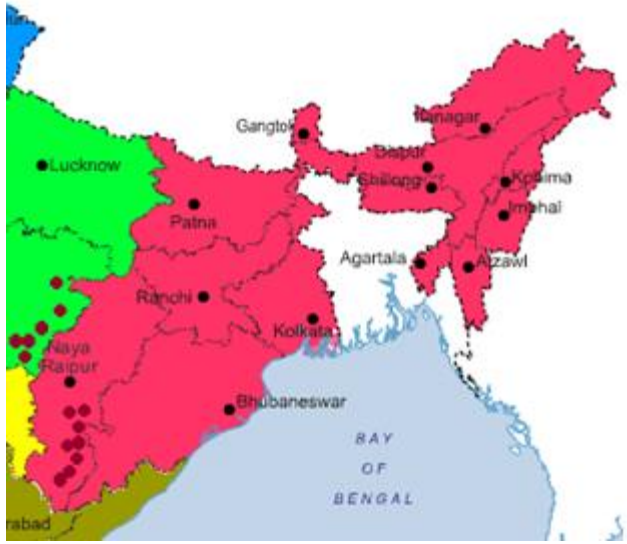


Note: **1. North – Few small plants are in J&K.**
2. In Gujarat most of the cement plants are in Saurashtra, therefore Rajasthan players would keep targeting North & South of Gujarat.

Inter regional movement of Cement 3/4

East

- Facilities are basically in Raipur-Bilaspur cluster and Meghalaya state.
- Because of operating steel mills in the region, blast furnace slag is available in the states – Chhattisgarh, Jharkhand, Orissa and West Bengal.
- Blast furnace slag is also used in place of Clinker to produce cement.



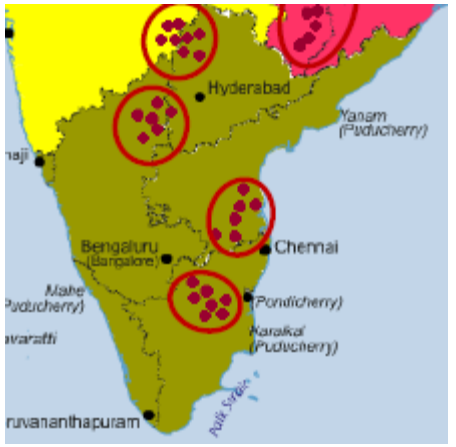
- Earlier East was a deficit region but with quick addition of capacities it has become almost self sufficient
- Main players are Ultratech, Dalmia and Lafarge.

<u>Note:</u> Other states – Orissa, Assam, West Bengal, Jharkhand, and Bihar also have some clinker capacities.

Inter regional movement of Cement 4/4

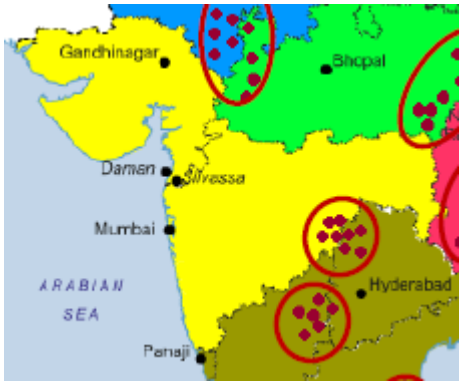
South

- Abundant availability of limestone in 3 clusters – Gulbarga, Nalagonda, and Yerraguntla
- From Gulbarga product moves to South of Maharashtra.
- In excess situation product moves to Eastern region and Myanmar.
- Main players are Chettinad, Ramco, ACC and India Cement



West

- Facilities are in Chandrapur cluster and Saurashtra of Gujarat.
- In coastal areas product comes from Saurashtra.
- Main players are Ultratech and Ambuja.



Cost Structure

	NP 3 %	NP 1 %	RP 1 %
Net Sales			
Operating Expenses	82%	90%	76%
Operating Profit	18%	10%	24%
Other Operating Income	1%	3%	0%
Operating Profit (EBITDA Excluding other income)	**19%**	13%	**24%**
Other Income	1%	1%	2%
EBITDA	**20%**	**11%**	**26%**
Material	15%	15%	8%
Purchased	2%	1%	
Royalty		2%	3%
Employee	6%	7%	7%
Power & Fuel	**18%**	**21%**	**20%**
Freight & Forwarding	**25%**	**24%**	**21%**
Stores & Spares	3%	3%	4%
Packing Matls.	3%	4%	3%
Repairs	1%	1%	2%
Advertisements	1%	1%	1%
Sales Promotion	4%	1%	3%
Finance Cost	2%	1%	1%
Depriciation	5%	6%	16%

- Freight & Forwarding is an important cost element – varies between 20 to 25% of net sales.
- Power & Fuel is another important cost element – varies between 20 to 25% of net sales.
- To optimize Power & Fuel cost industry is shifting towards the use of 'Pet Coke' and 'Waste Heat Recovery system' (WHRP).

Summary - Industry Level Analysis 1/2

- A large number of ~75 both domestic and international players operate.
- National and Regional players control ~70% of capacity.
- Industry is fairly consolidated as top 6 players have more than 51% of capacity at national level.
- As industry has enough growth potential, new players are entering – Emami, Bhutan based company etc.
- Cement is retail driven market in India. Share of RMC is just 8% against 88% in USA and 35% in China. Therefore, buyers don't have negotiation power.
- As players have captive limestone mines and there are multiple sources for energy requirement, suppliers don't have any undue influence.
- Complimentors – construction chemicals, are not strong enough.

Summary - Industry Level Analysis 2/2

Note:

Contrary to popular belief Cement is not a matured industry. Rather than looking at the maturity level from a technological development point of view one should look at it from a demand growth perspective. An industry which is growing at a pace of GDP growth rate – long term average, can not be called matured. In commodities, technological developments help to improve processes, specific consumptions and economic size of plants rather than changing attributes of the final products.

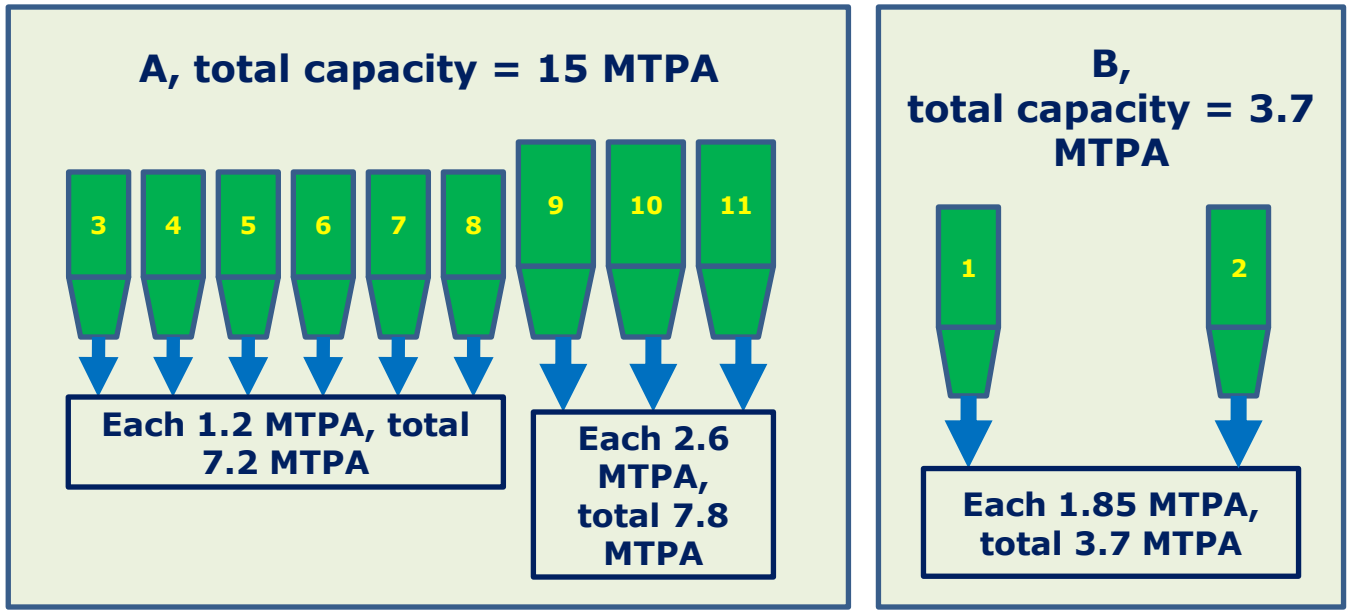
Part 2

Business Model

- **Value Creation**
- **Value Capture**
- **Superiority of Resources**
- **Sustainability of Model**

Value Creation through Asset Architecture

- RP1 has huge clinker capacity of ~18.7 million tons at two nearby locations in Rajasthan – A and B.



- A - only clinker plant in the world to have 9 lines at one location. It is the largest.

Note:
Another popular belief is that construct of energy supplies does not support creation of mega size high energy intensive plant in the country. This myth needs to be revalidated with facts .

Asset Architecture helps to create Competitive Advantage 1/4

- Competitive advantage in cement industry is cost advantage which an unit enjoys over its competitors to serve a particular market.

Lower Project Cost

- Units at locations A & B are built by internal 'Project Management' team over a period of time.
- This could be done because management adopted organic route of growth over acquisition route and brown-field expansion over green-field expansion.
- This helped project team to develop and continuously improve skills set which resulted into much shorter project schedule.

Note: Acquisition is not always a better option to growth as it brings its own structure of Fixed Cost with it.

Asset Architecture help to create Competitive Advantage 2/4

- Unit 8 was built in 367 days against the industry average of 630 days.
- Next unit was built in 330 days, bettering it own standard.
- Ultimately, such achievements help to reduce 'Cost' of the cement per bag.

Lower Operating Cost

- In commodity 'Fixed Cost' as well as 'Operating Cost' of single location large capacity – *modular units, each having economic size confirming to technology of the day*, is more economical than having smaller units at multiple locations.
- Another advantage of such architecture is to quickly absorb process related changes across all the units which help to optimize operating costs. Some examples are -

Asset Architecture help to create Competitive Advantage 3/4

1. Maximizing use of Green Energy

- RP1 uses WHRP to heat the feed. Total capacity of WHRPs is ~111 MW. It is the largest in the world outside China.
- Energy generated by WHRPs is 44% of energy requirement of cement plants.

  NP3 – 59 MW, 5.1% of total energy
- Impact of using WHRP at this scale is visible on energy consumption -

	RP 3	NP 1	NP 2
Power consumption - KWh/t of Cement	72.13	84.45	79.2
Specific Fuel consumption - kCal/Kg of Clinker	719	730	747

Asset Architecture help to create Competitive Advantage 4/4

2. Use of alternate Fuel – Pet coke

- Pet coke has emerged as a preferred choice of fuel in India. Demand is rising as it is coming from sectors like Cement, Glass, Textiles and Brick.
- RP1 uses up to 100% of Pet coke for its energy requirement, it has competitive edge in shifting to any fuel types at very short notice.
- Competitors are also using pet coke but they need to catch up RP1 fast – **NP3** 70% of total energy; **NP1** 27% of total energy; **NP2** 6% of total energy

3. Others

- Replacing 'Natural Gypsum' to 'Synthetic Gypsum' in FGD plant

Note: A separate detailed study is done on global dynamics of Pet coke, which is not the part of this presentation.

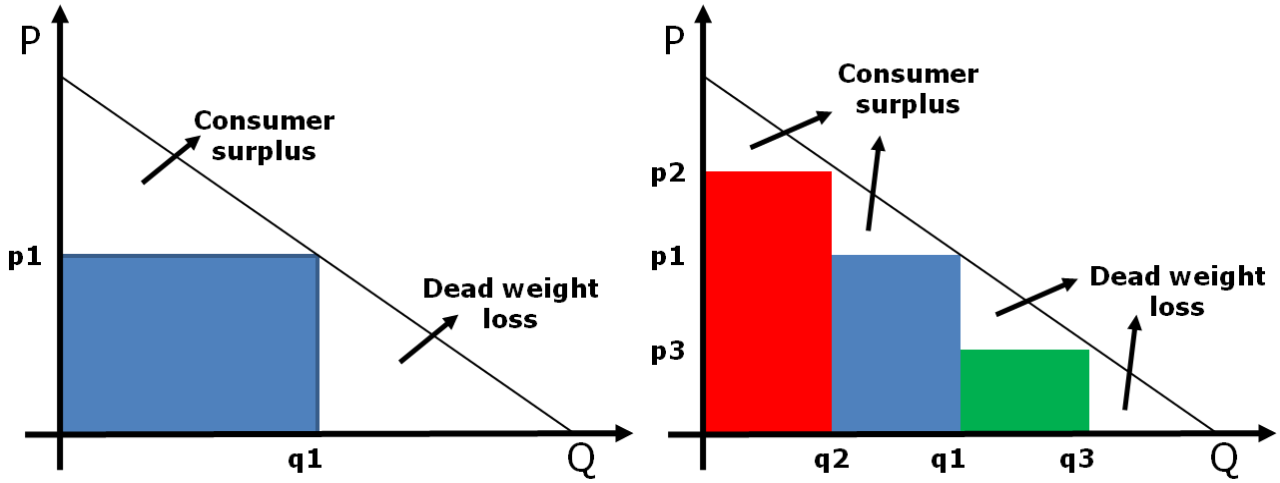
Part 2

Business Model

- Value Creation
- **Value Capture**
- Superiority of Resources
- Sustainability of Model

Value Capturing through multiple offerings and lower lead

- RP1 has three different brands – B1, B2, and B3.
- Multiple brand offerings help to reduce 'Consumer Surplus' and 'Dead Weight Loss' but it becomes tough to differentiate USP of brand at middle position. Brand B2 could be in that situation.
- Issue of 'brand creep' is likely phenomenon in that case, but it could be managed.
- Cut the lead to just 80 km in NCR and Northern markets.



Part 2

Business Model

- Value Creation
- Value Capture
- **Superiority of Resources**
- Sustainability of Model

Business Model- Superiority of Resources

Success of this model is reflected in cost advantage which it enjoys and leadership position in North.

	Imitability Easy to copy	**Durability** Rate of resource depletion	**Appropriability** Who captures the value	**Substitutability** Can be trumped by another resources	**Competitive Superiority** Superior to competition
Tangible Resources					
Physical assets - The lagest single site in the world					
Access to capital when required - Strong cash generation and low D/E ratio					
Intangible Resources					
Strong brands					
Good sourcing contracts					
Entrepreneurial orientation					
Competencies					
Technical & manufacturing skills					
Market share - Customer loyalty & satisfaction					
Resource and personnel utilization					

Note:

RP1's cost per ton is Rs. 800 to 1300 lower than its competitors.

- Highly Negative
- Negative
- Somewhat Neutral
- Positive
- Highly Positive

Answer to Strategic Questions

1. **What could be the reasons of such a distinctly higher valuation of RP1? Does it enjoy any competitive advantage? If yes, from where does this advantage come?**

Ans:

Distinctly higher valuation is due to the strategic advantages which RP1 has. It has competitive advantage which is neither due to natural resources nor technical prowess. Competitive advantage is built through asset architecture which was judiciously created over a period of time.

2. **Is this competitive advantage sustainable? For how long RP1 can continue reaping the benefits?**

Ans:

Asset architecture has its own inertia and it takes time to replicate the same. Plus there are many other factors viz. External, Industry etc which hinder the copy of the same architecture. Therefore, for another few decades or so RP1 could continue reaping the benefits.

3. **If this advantage is location/asset specific how could RP1 leverage this to grow the business further?**

Ans:

Addressed in next section -

Part 2

Business Model

- Value Creation
- Value Capture
- Superiority of Resources
- **Sustainability of Model**

Sustainability of Model 1/3

- Last strategic question which is yet to be answered is – If competitive advantage is location/asset specific how could it be leveraged to grow the business further.
- One view in the commodity business is that if one has a unit with cost curve lower than that of industry cost curve, there is no need to bother for growth. One can keep operating that unit for long.
- This view has its own pitfall. Sometimes growth becomes necessary even to sustain the business.
- In the case of RP1, due to its asset architectures and competitive advantage it has some strengths and weaknesses.
- Regional demand growth, consolidation and external factors offer opportunities and threats which need to be addressed considering strengths and weaknesses.

Sustainability of Model 2/3

- Commodity business is cyclical in nature, to mitigate the impact of cyclicality and capture the growth of other regions RP1 could consider entering into other regions.
- RP1 could leverage its competitive advantage which is location/asset specific to grow the business further through following 4 strategies –
  a. Maxi-Maxi Strategy (SO)
  b. Maxi-Mini Strategy (ST)
  c. Mini-Maxi Strategy (WO)
  d. Mini-Mini Strategy (WT)

  Details of above approaches are given in the next slide -

Strategic approach to Growth Options

Good strategy works by focusing energy & resources on one or very few pivotal objectives .

Strengths	Weaknesses
Project management	Limitations of fresh capacity addition due to limestone constraint at existing sites
Innovative production techniques	
Brand name reputation	Existing sites loosing competitive advantage to feed new GU/Markets
Good marketing skills	
Good financial management	Rising branding cost

Opportunities	Maxi-Maxi Strategies (SO)	Mini-Maxi Strategies (WO)
Apply Brand name & Capital in new areas Extend cost & differentiation advantage Participate in growth stories of other regions	Enter into the fastest growing region of East by establishing a base in Raipur-Bilaspur cluster. A base can also be created in Satna cluster to feed the markets of Bihar, Central & Northern regions.	North market will keep on growing, as RP1 is market leader it should try to protect market share by increasing supply either from a new site in Rajasthan or from a new location in Central cluster. It could try to do both.
Threats	**Maxi-Mini Strategies (ST)**	**Mini-Mini Strategies (WT)**
Cyclical business - changes in economic factors coupled with slower market growth Increase in regional competition Changing industry structure - potential for take over	Entry into other regions would help RP1 to cushion Cyclical Downturn. It'll also help to tackle increasing regional competition.	The inorganic route in comparison to organic is not a superior option as it brings fixed cost along with it. But sometimes it helps to enter a new region. Therefore, in a limited way it could be exercised. It'll prepare RP1 for future shake up in the industry.

Sustainability of Model 3/3

- These 4 strategic approaches can be prioritized according to the management discretion.
- At regular intervals business model canvas and key success factors need to be revisited to ensure that one should not end up changing the direction while pursuing for growth.
- Business model canvass and key success factors are given in next slides.

Business Model - Canvas

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
Fuel/alternate fuel suppliers	Speed of response to changing conditions	Newness	Dedicated personal assistance	Segmented
Logistics providers	Production effectiveness & delivery schedule	Performance	Complaint handled on war foot	Bagged driven retail market
Dealers & Retailers	Use of strategic plans & strategic analysis	Brand		
Railways	Stability of cost	Price		
	Key Resources	Accessibility	**Channels**	
	Physical assets		Traditional dealer network with lead of ~80 Km	
	Strong brands		More local warehouse than one regional	
	Technical & Manufacturing skills		Backend sales analytic team	
	Resource & Personal utilization		More focus on creating local awareness	

Cost Structure	Revenue Streams
Cost driven business	List price
High energy cost - 20%	Retail sales
High freight & forwarding cost - 20%	Product feature dependent
Low finance cost - 1%	Volume dependednt & Bagaining/Discounts - Limited

Business Model – Key Success Factors

Technology Related
Maximizing use of Petcoke
Optimizing energy uses
Manufacturing Related
Low cost production efficency
High use of fixed asstes
High labour productivity
Distribution Related
Stong channel network
Low distribution cost
Marketing Related
Multiple brands
Effecive advertising
Skills Related
Expertize in project management
Suprior workforce
Organizational Capability
Indepth experience - managerial
Others
Favourable image
Access to financial capital
Convenient location

Thank You

The purpose of this note is academic. This note does not comment in any way on the strategy & performance of Cement Players.

Data Source: From public domain and internal analysis