Chapter 2

Cement Industry

2.1 Introduction

India is the second largest cement industry in the world after China. Cement is the mixture of sand, concrete and other materials. A large amount of concrete is used annually. This mixture works as an adhesive which helps in infrastructure and buildings. Cement demand is continuously increasing as the housing project, infrastructure project and road projects are increasing considerably.¹

National firms are producing cement in a large amount. International firms account only 30% of the whole production. Developing countries are leading ahead in producing cement. All Indian companies are increasing their production capacity and acquiring other cement companies. Recently Ultratech acquired Jaypee cement and increased its capacity to 65 mtpa approximately.

With high capacity, the cost also increases. Cement industry has the same problem. As its capacity is high, it carries high cost. The initial investment takes time to recover the amount, so complete care is needed while establishing a plant.

As more fuel is consumed in manufacturing cement so companies establish their own electricity plants. Major cement companies produce electricity from the wastage and coal.

The cement companies are modernizing as it is becoming technology oriented which lessen the need of high labor. Being a global commodity, it is produced in large number of plants. Being a heavy product, its transportation becomes more expensive than its cost, so it is limited to a distance of 300km of any site.
There is not much change in the qualities of cement. Although raw materials are used from different places but still there are less varieties of cement so it is understood as homogeneous product.

Transportation cost of cement is higher as it is a heavy product. Sometimes it is very costly when the distance is more.²

2.2 Scope and Objective of the Study

The scope and objective of the research is to study the Performance Management System in cement industry. Cement industry is the third largest revenue generating industry. The aim of the study is to analyse the major players in cement industry, capacity and competition issues prevailing in the scenario.
2.3 Historical Perspective

A Kolkata-based company firstly started manufacturing cement. Firstly it set up the plant in Porbandar. It installed a capacity of near 1000 tonnes. This industry wanted to set up a fair system to give fair price to everyone. The Government also supported in the beginning for the positive growth of cement industry.

The Government decreased its intervention to grow the industry. It gave complete freedom. Many investors spent billions of money to enter in export market as it wanted to earn a large profit. Gradually the Government also started intervening.

Historical Development

1. Dominant Imports 1914-1924

During this decade, 1 million ton cement was imported for consumption which was 50% of the total consumption. A Kolkata based company started manufacturing cement with the capacity of 1000 tone which touched quarter million tone in first decade. In the end of this period only .26 mtpa was produced against 50 million capacities.

Many of the companies failed due to improper utilization of resources. This created a problem of low utilization of the capacity. Due to cut throat competition, many companies wind up their business. It was a crucial time for this industry.

2. Crucial Time 1924-1941

It was the time of almost two decade in which the import dominance was lessened and production was boosted. Production went high in the beginning from 3.5 lakh tones to 18.2
lakh tones approximately in the end of the period. Import came down to a very few thousand tone later which was near about 6 percent of the total consumption.

Due to Europe recession in this period, cement industry was in stress and trying to survive. Cement marketing company and Concrete association helped to some extent but it was very little support for the industry survival. Costing and marketing was still a big problem prevailing in the industry.

3. Price Perspective 1942-1951

Starting four years in this decade was good for the industry. As the Defense of Indian rules started using its 90 percent production for defense purpose. Remaining was used for private purpose. It increased the production from approximately 2 million to 3 million. Imports came down to nearly 2 percent. In the next decade Government of India(GOI) controlled fixing prices informally.

4. Plan and Control Mechanism 1951-1982

Cement Control took cement production under its control in price controlling and marketing. The cement capacity increased to a certain level so its shortage remained in the market.

5. Partial Decontrol 1982-1987

Government analyzed that it has to give some tax free to grow the industry so it gave .12 percent post tax return on net worth. Ultimately the industry increased its capacity and showed excitement towards the growth of the industry.
6. Total Decontrol – March 1989

From this period, the industry was totally decontrolled. The cement industry showed extreme growth as its speed jumped and showed unexpected results.$^3$
2.4 Porter Five Forces Model of Cement Industry

**Figure 2.4.1**

- **HIGH**
  - Threat of New Entrants.
  - The Indian companies are present from long time so heavy investment or increased capacity is a high entry barrier

- **LOW**
  - Firm Rivalry
  - Inter firm Competition
  - Being oligopoly, it is full in the hands of major firms.

- **LOW**
  - Bargaining Power of Buyers
  - Major companies are focusing on local markets.

- **MEDIUM**
  - Bargaining Power of Supplier
  - Coal or freight is common

- **Low**
  - Threat of Substitutes
  - There is no substitute of cement

**Source:** S.P Singh. 'Assessment of competition in cement industry of India,' Competition Commission of India and Vinod Gupta School of Management, IIT, Kharagpur, 2012.
2.5 Current Scenario of Cement industry

The growth of cement industry is speeding up as infrastructure and housing demand is continuously increasing. Recently cement companies are planning to expand its production capacity. Most of the companies are seeking to merge other companies to increase its market share.

**Market Focus**

Many companies are working in this industry. As cement is very important factor in everyone’s life so the Government is also intervening much in this industry.

India is known for inexpensive labour so costing of manufacturing in India is less. This is a positive aspect for the industry. The demand is increasing in exports also. This industry helps to strengthen the economic condition to a great extent. It helps in rupee strengthening and improving the economic condition of the country.

**About the Growth of Industry**

It is the second largest industry after china in the world. It comprises more than 150 large plants. Companies are announcing more plants in coming days. It has more than 370 mini plants and 130 units. The installed capacity of these plants is more than 350mtpa. The capacity of the cement companies are increasing as companies are launching new plants in large number.
Job Opportunity

This industry is quite large. It has many sectors, some are organised and some are unorganised. This industry helped in economic development also as it has given employment opportunities to educated and uneducated people.\textsuperscript{4}
## Classification of Cement

<table>
<thead>
<tr>
<th>Cement Type</th>
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</thead>
<tbody>
<tr>
<td>Ordinary Portland cement</td>
</tr>
<tr>
<td>Portland Pozzolana Cement</td>
</tr>
<tr>
<td>White Cement</td>
</tr>
<tr>
<td>Specialised Cement</td>
</tr>
<tr>
<td>Rapid Hardening Portland Cement</td>
</tr>
<tr>
<td>Portland Blast Furnace Slag Cement</td>
</tr>
</tbody>
</table>

### Ordinary Portland Cement

95% clinker and 5% gypsum is added in ordinary portland cement. Its abbreviation is OPC cement. It carries 69 percent of all type of cement.

### Portland Pozzolana Cement

Its abbreviation is PPC cement. 80% clinker, only 5% gypsum, 15% pozzolana are added in this cement. Few percentage of other materials are also added. It carries 18 percent of all type of cement.

### White Cement

White cement is the premium cement in all type of cement. Its color is completely white. It is used in tiles form mostly. It is very expensive so less consumed.

### Portland Blast Furnace Slag Cement

Its abbreviation is PBFSC. It is made of 50% blast furnace slag, 40% clinker and 10% of gypsum. It accounts 10% of total consumption. This cement is used in massive construction.
**Specialized Cement**

Special material is used for special purpose. It is known as specialized cement.

**Rapid Hardening Portland Cement**

This cement is very strong. It has more strength. Its grains are finer than OPC cement.

**Water Proof Cement**

It is waterproof cement. It has some special adhesive like calcium stearate or non-spanifiable.

The cement is manufactured by “Dry Process”. It is the latest technology. Fuel is less consumed when dry process is adopted. The wet process consumes more fuel. The power consumption of dry process is higher whereas the wet process consumes less power. Thus, cement companies install their own electricity plants.

Lime stone is used mainly in cement process as it is the main material. Cement preparation need iron, sand and shale. Some by products are also used to prepare cement. Government gives permission to drill limestone from the mines. Other products are to be brought from different places according to the convenience.

Blasting system is used to crush the limestone with the impactor, a heating equipment to break it of different sizes.

 Crushed limestone is sent to store where it is kept in many piles. Its chemical composition is checked so that its errors can be eliminated. Coal is also kept in the same way.

The other products are now added to the limestone as it is required. Now, it is filled in roller mill. It goes through a heating and sieving process. In this way the size of limestone is changed to small one.
This process removes the moist out of the chemical and limestone and gives us clinker. The heater crushes the product into very tiny particles. The other by-products like sand, shale and clay are also used in this process.

Now the hot clinker is kept for cooling in grate cooler, where number of fans leave air to the clinker from different directions. Clinker size is reduced to more small particles. 1400 degree is the temperature from where the clinker is kept to 140 degree.

Gypsum and clinker are mixed in the required proportion. It is fed into the system, a high pressure grinding roll called Polycom. From this roll it is taken to a Separator. The separator transports it to a Ball Mill. From Ball mill it is filled into buckets.

With the help of compression, it is filled into packets. Proper ventilation system is provided. It is done in the form dusting to vapor out the cement. It is done to reduce the risk of lumps.\(^6\)

### 2.6 DEMAND DRIVERS OF CEMENT INDUSTRY\(^7\)

According to the report on housing shortage in context of Eleventh plan, housing sector is expected to increase by 265 lakh units as per the requirements. Commercial sector has shown a sharp decline due to economic crisis in 2008. Lease and rentals lead to sharp correction. Further in 2009-10 and 2013-14, hotel industry (commercial sector) demand is expected to increase. Demand is expected to increase 15%.

**The Demand Drivers are**

- Housing Sector
- Infrastructure
- Commercial Real Estate
- Industrial

Chart 2.6(a) Graphical Presentation of Demand Drivers of Cement

Demand Drivers of Cement

Source: Crisil Research

The figure clearly depicts that the biggest demand driver of cement is Housing Sector. It contributes 64%. The second demand driver is Infrastructure, which contributes 17%. The remaining Commercial Real Estate and Industrial covers 13% and 6% respectively.
Chart 2.6(b) Cement Demand has high correlation with GDP

Cement consumption and GDP. There is a close relationship of cement consumption and GDP. We can see the relationship in the below graph.

Source: CMIE, CSO and India Ratings CMIE: Centre For Monitoring Indian Economy. CSO: Central Statistical Organization.

The graph shows the data from 2005 to 2012. It clearly depicts that GDP increased with its cement consumption except 2011.
Chart 2.6(c) Cement Capacity and Cement Production

As the cement capacity increases, cement production also increases. The graph shows the relationship between cement capacity and cement production.

Source: CMIE, Industry Reports and India Ratings

The graph shows the data from 2008 to 2015. It depicts clearly that as the cement capacity increased, cement production also increased in same pattern.¹⁰
### 2.7 Major Players of Cement Industry

“The major players in cement industry are given below (2012-2013)”\(^{10}\)

#### Table 2.7.1

<table>
<thead>
<tr>
<th>Company</th>
<th>Turnover</th>
<th>PAT</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC Limited</td>
<td>9340</td>
<td>1014</td>
<td>6994</td>
</tr>
<tr>
<td>Ambuja Cement</td>
<td>7999</td>
<td>1166</td>
<td>7396</td>
</tr>
<tr>
<td>Ultratech</td>
<td>13981</td>
<td>1368</td>
<td>16254</td>
</tr>
<tr>
<td>Company</td>
<td>Turnover</td>
<td>PAT</td>
<td>Asset</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td>India Cements</td>
<td>3668</td>
<td>65</td>
<td>6728</td>
</tr>
<tr>
<td>Shree Cements</td>
<td>3559</td>
<td>210</td>
<td>3995</td>
</tr>
<tr>
<td>Birla Corporation</td>
<td>2265</td>
<td>321</td>
<td>3076</td>
</tr>
<tr>
<td>J K Cement</td>
<td>2120</td>
<td>63.99</td>
<td>2780</td>
</tr>
</tbody>
</table>
Graphical Presentation of Cement Companies Turnover is given below:

Chart 2.7(a) Graphical Presentation of Cement Companies Turnover

The graph shows the turnover of top companies in cement industry. Ultratech has highest turnover. Birla has the lowest turnover.
2.8 Performance Management System in Cement Industry

Performance Management System is a process to establish what is to be achieved and managing the employee’s performance in a way that increases the chance about how to be achieved.

In the very beginning of the year the manager and the employee sit together and decide their work plan. They mutually understand their expectation. The work plan helps the employee to understand the authorities and responsibilities. They jointly identify the key result areas, discuss it and identify the competencies needed to perform the duties.

Organizational performance planning includes organizational goal planning where senior manager sets the goals to be achieved. The Functional Head set the departmental goals. At last manager and employee set the annual goals jointly. Similarly individual goals are set. They set the key result areas for individual. Manager and employee both agree to the goals.

In midterm assessment they jointly find out the need of resources and any kind of support. They discuss the work performed by the employee. They finalise the work and improvement to be done. The job priorities are changed if needed any. In mid-term assessment the human resource administrator sends an email to all employees and managers for half yearly review.

The employee put the results achieved against agreed goals for review. The manager checks the results against agreed goals. Manager discuss with the employee about the performance. The Manager completes the review process.

Human resource administrator runs a report to check that review process is completed. The subordinate fills the self appraisal form. He himself evaluates his performance, achievements, and gives rating to his work. He mentions what skills need to be polished in him.
Simultaneously the appraisal form is filled by manager also, where he checks the performance against the pre set key result areas. He takes corrective measures and outline achievements as well. He discuss with the employee about his appraisal.

In annual assessment the human resource administrator sends an email to employees for self evaluation. Employee completes self evaluation and enters career and training needs. Manager review and completes career and training needs. Manager’s manager approves the appraisal and communicates. HR collects the ratings and forwards to normalisation. Final rating from the normalisation is entered in employee performance detail.

After yearly assessment, Higher Authority also assesses the work done by an employee so that objectivity can be eliminated. Proper accuracy is concerned. Final performance is discussed and development issues are communicated. Performance ratings are reviewed. Employee commitment is taken for improvement next time. Training is given to employee as per their need. Promotion and transfers are announced. Reward and compensations are given to employee.
2.9 ULTRATECH

“Ultratech was set up before 14 years ago as Larsen and turbo. It was acquired by Grasim cement. It was renamed Ultratech cement after four years. It is largest in clinker. It has more than 22 plants in India. It is spread in 408 villages.

Its yearly capacity is more than 48 million tones.\textsuperscript{12}

Figure 2.9.1
**Current Scenario**

- “The net profit is declined 6.99% in June 2014 to rupees 625.57 crore in the quarter end against 672.60 crore in last year. This company aimed to hit the target to increase the capacity to 63.45 Mtpa by 2015 from 53.9.

- It has announced its plans to set up two grinding units in Rajasthan and increase the capacity by 2.90mtpa.

- Bombay and Hyderabad courts have given approval to acquire Jaypee cement.

- A unit in named Sewagram is going to be acquired by Ultratech Cement Ltd. The European companies are planning to wind up their plants so Ultratech is considering to acquire these plants also.

- Before the approval of court, Capital market regulator SEBI, shareholders, and creditors also gave approval for acquisition of 4.8 Mtpa unit, thermal power plant, limestone reserves and captive jetty. Against this Ultratech will absorb its debt and will issue shares worth 150 crore to JP Associates.\(^\text{13}\)

The vision of the company is to set a good image in the industry. To focus on customer satisfaction and proper attention is to be given to each and every factor. It wants full transparent system. It focuses to set high standards and follow this standard. The Company commits to deliver the value to customers, stakeholders and employees. It wants to give high quality products and deliver high satisfaction to all customers. It commits to take care of its own actions based on trust and belief.

The company wants to foster an environment full of energy and joy. The positive and user friendly environment helps them to motivate all employees to give their best. This environment makes the employees inspired and creates emotional attachment with the organisation. It helps to attain the objectives voluntarily.\(^\text{14}\)
Ultratech use Online Performance Management System. It enables the company to manage the appraisal online which gives maximum benefit to get the employee record quickly. It automatically identifies the training needs, career plans and competency assessment. It identifies the goals for next year and reviews the performance for current year.
2.10 WONDER CEMENT

Rk marble is the owner of wonder cement who is known for Marble Industry. In this cut throat competition, this company wants to stand itself in a high position and want to set a brand name with high quality. Its focus is on channel of marketing so that this brand can set its footprints in market as soon as possible. It wants to achieve a premium position in market.\(^{16}\)

**Vision**

The commitment of the company is to set a brand name in future which stands for high quality and trust. This company wants to see itself in a position where it is considered as one of the premium and preferred cement company.

**Mission**

The mission is to remain updated with new technology, innovative, trustworthy and innovative and one of the leading brand in the industry.

**Plants**

The cement plant is located in Nimbahera, District Chittorgarh, in Rajasthan. The company has technical collaboration from ThyssenKrupp and Pfeiffer Ltd., the world leader in cement technology, is at par with international standards. The entire infrastructure is designed on the basis of latest environment norms, with the help of Reverse air bag house and ESP and a number of nuisance bag filters installed having emission of below permissible unit that enable the plant to be clean & dust free.\(^{17}\)
Current Status

Wonder Cement planned expansion programme to survive in this cut throat competition. Each Cement unit is planning to expand its cement capacity as it is strongly expected that the demand of cement will rise to a large amount this year. Due to stressed conditions the cement companies kept their capacity lower.

It is going to increase its capacity from 3.25 mtpa to 8.0 mtpa and clinker from 2.0 mtpa to 6.0 mtpa. This company’s plan is to expand the power plant by adding 40 mw. Not only capacity expansion but this project is planning to expand its captive power plant from 40 MW to 80 mw. The projects estimated cost is 26250 million.
2.11 J.K CEMENT

It is an affiliate J.K. Organisation, started by Lala Kamlapat Singhania. It is planning to strengthen its product excellence, customer satisfaction and technology upgradation. The company was established more than three decades before. In 1975 Nimbha hera, Rajasthan the company started its operations for the first time. Gradually it expanded and started two more units in Mangrol and Gotan.\(^{19}\)

The Company has automated plants. It is second large company in white cement. The power plant for the first time was set up by this company in Bamania Rajasthan. Not only captive power plant but waste heat recovery plant was also established by it.

Products

- J.K Super
- J.K. White Cement
- J.K Sarvsaktiman
- J.K Walputty\(^{20}\)

Current Status of J.K Cement

It is second largest company in White Cement. Its capacity is 7.5 Mtpa. It is about to rise the production by 10.5 mtpa. It has 5 plants in India.

Cement demand is expected to increase by large quantity in 2014 so J.K is planning to increase its capacity utilisation.

In March quarter 2014, the company sales grew by 8% in sales and 36% hike in net profit due to shutdown at Binani cement Rajasthan plant. Expansion of units and introduction of new
plants will help the company to increase its market share. As Karnataka plant is expected to revive in Southern Market. Political Stability will improve the market which dropped the demand by 40% last year.

J.K Cement expanded its capacity of white cement as housing demand is expected to rise. The product is used in mosaic tiles and wall putty care. White Cement margin is 30% more than grey cement. Rupee strengthening will help to import the coal cheaper.

Debt ratio of J.K Cement has increased 8 times a year before. With increased capacity, the ratio is expected to improve soon.²¹
2.12 SHREE CEMENT

“It was established in 1979. It was founded in Beawar in Ajmer district, Rajasthan. There are two plants in Jobner and Suratgarh in state. It has 7 plants in India. Its brands are from its own name. Its vision is to spread happiness. It wants prosperity among all. It wants to be more efficient and more innovative. It is passionate for efficient work. It wants maximum utilization of resources so that cost can be minimized. It is dynamic, accept challenges, and show flexibility in problems. It is risk taking and wants proper communication among all. It shows compassion and wants to live like family. It wants an environment of trust and belief. It believes in helping and positive attitude. It follows social responsibility. It is quality and brand conscious. It works towards energy consumption and focus on individual development. It seeks to fulfill its social responsibility and achieve maximum customer satisfaction.22

“Its capacity is 17.5 mtpa. It is first company in India, utilized the clinker best. It continuously got four star rating. Its new project is in Raipur and UP. In 2011-12 the company achieved the turnover 59 billion approximately. In 2010-11, it was 34 billion whereas turnover in 2008-09 was 27 billion only. It captures 17 percent market share in India.23

Brands of Shree Cement

- Bangur Cement
- Shree Ultra
- Rockstrong Cement
The company conducts customer satisfaction survey annually. It follows third party survey approach as well. Internal surveys are also done.\textsuperscript{24} Shree Cement is about to expand its limestone projects in Chattisgarh. Due to environment concerns, it will start its operations in two years.\textsuperscript{25}
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