10. CONCLUSION:

The Global Scenario: Global VS Domestic.
Techno Economic Parameters of Sail Units.
Cost Saving the high-tech way and Superband.
Measures to endure Operational Efficiency.
Sail towards its corporate plan 2012.
Pride of Sail-Best of better future of steel India.
The global scenario

The advent of the concept of globalisation in the early 1990s boosted steel consumption in the first half of the decade, particularly in the ASEAN countries. From a level of 26% of total world production in 1990, trade in steel made a quantum jump to 38% in 1995. New capacities also came into being during this period in some countries.

However, the Asian economic meltdown in 1996 trashed the currencies of many South-East Asian countries, depressed growth prospects and turned them into net exporters of steel. Global trade was adversely impacted by the huge reverse inflow of steel into the international market resulting in a glut. The resultant sharp fall in international steel prices affected the domestic steel markets as well since imports became cheaper. Oversupply and rock-bottom prices depressed the fortunes of the steel industry worldwide.

Many advanced countries like the US and EU raised trade barriers in the form of anti-dumping and countervailing duties as well as safeguard measures. Beside, the EU-15 countries, with substantial interregional trade in steel, did not even require a great level of imports to sustain internal demand. Thus these markets were effectively shut out for foreign steel. Unable to sustain operations any further, many weak steel companies downed shutters and several international players merged with others in a bid to strengthen their positions.

Towards the end of the decade, however, steel consumption in China began to explode. By then China had smelled the benefits of globalisation and laid out the welcome mat for foreign investment. The new mindset also felt the necessity for creation of infrastructure facilities. This spawned a countrywide infrastructure development programme, coinciding with feverish construction activity in the run-up to the Olympics to be hosted in the country in 2008.

The most-wanted material in this humungous plan was, of course, steel. Although the leading steel producer in the world, China needs to import around 25 MT annually to support its massive infrastructure programme. The country's growing demand for steel has come like life-saving oxygen for the recession-hit, gaping global steel industry.
From a level of 114 MT in 1998, consumption of steel in China zoomed to 211 MT in 2002, an increase of 85% in a matter of only four years. In fact, in 1992, the share of China in world steel consumption was only 12%; in 2002 it shot up to 26%. Thus China has now emerged as the largest overseas market, and is driving the global steel scenario today.

The world market for steel is huge—consumption touched 820 MT in 2002. But more than half the steel produced in the world emerges from only five countries—China, Japan, US, Russia and South Korea. Excluding Russia, these countries are also the leading consumers of steel in the world. Yet 40% of the total steel produced worldwide crosses national borders, i.e. more than 300 MT of steel is traded in the international arena. India has a minuscule share of the total world market—a mere 1.5%. More significantly, the world market in steel is quite buoyant being driven by the phenomenal growth in Chinese consumption. Natural, most Indian steel companies want to participate in the lucrative export market, by enhancing their export volumes.

Today, Asia, including China, is the biggest market for steel, being an importer of 83 MT. However, the market for foreign steel is also quite large in North America at 40 MT, despite the fact that it is completely protected by way of trade barriers like safeguards, antidumping and countervailing duties. Other markets like Europe are relatively more stable and take in 125 MT of steel, 60% of which is accounted for by intra-regional trade. Africa imports another 9-10 MT of steel products annually.

Globally, the world steel trade, broken up in the major product categories: HR coils (44 MT), re-rolls (47 MT) CR products (27 MT), plates (18 MT), galvanized products (20 MT), wire-rods & rebars (30 MT), structurals (18 MT) and tubes (24 MT).

In 2002, world steel consumption grew by a healthy 6%. Most analysts have estimated a compounded annual growth rate of 3-4% in the next 2-3 years. Obviously, international steel trade will also grow accordingly. For India which exported around 4.5 MT of steel in 2002, the forecast is heartening. Until domestic consumption in our country takes off, exports are destined to grow in the coming years, considering that the
country has excess capacity of around 3-4 MT. Emerging end-user applications and consumption segments like gas pipeline, automotive, home appliance, shipbuilding & repair, deepwater ports, etc., in China alone brighten the vista for exporters.

**Replenishing the export basket**

Consistency in product quality is a major criterion for exporters, since international customers are very exacting about their demands/specifications and do not hesitate in rejecting consignments for the smallest non-compliance. In such cases, the exporter has to absorb the cost of shipment, etc.

Aware of these ground realities ITD has always endeavored to maintain required quality standards of shipments. Constant interaction with the producing plants has also helped to improve the quality of products exported. Finally, there is the bottom line to conform to market needs.

Through constant monitoring and review, SAIL keeps reorienting its export-mix in tune with the demand patterns of the international market. For instance, to reap the benefits of prevailing scenario of increasing prices of input materials in the international market, SAIL maximised the production of billets. "It is heartening indeed to see the way the Bhilai and Durgapur Steel Plants geared themselves up to keep pace with exports," says Mr. Verma. Durgapur, in fact, deserves special applause for fulfilling export commitments even in its existing status as a beginner in the world arena. Rourkela too has made a noteworthy start by dispatching small quantities of plates, CR/HR coils and CRNO. Enthused by the initial success, Rourkela has also expressed its desire to export galvanised sheets in the near future. Indeed, it is a happy augury for SAIL.

**Export incentive schemes**

**Preshipment credit in foreign currency (PCFC)**

This is a loan allowed to exporters for financing the purchase, processing, manufacturing or packing of goods on the basis of LCs or any other evidence of an order for export from India.

**Duty Entitlements Pass Book Scheme (DEPB)**

Under the scheme, an exporter is given credit as a specified percentage of FOB value of FOB value of exports. The rates at which such credit is available for SAIL's products is given below.
The DEPB and/or the items imported against it are freely transferable. In effect it means that where full Utilisation is not possible, it can be sold in the market.

All the ports as well as the land customs stations through which SAIL's products are exported are covered. Under this scheme with the sole exception of LCS at Nepalganj.

**Duty Free Replenishment Certificate (DFRC)**

DFRC is issued to an exporter for the import of inputs used in the manufacture of goods without payment of basic customs duty and special additional duty.

Since LCS at Nepalganj is not covered under DEPB, SAIL exports through this LCS under DFRC scheme.

A break-up of SAIL's export portfolio would reveal the following products:

- **Plates**: Perhaps the oldest egg in the export basket, SAIL plates continue to be well accepted in markets worldwide. The performance reached a pinnacle in the year 1997-98 when shipments of SAIL plates reached an impressive total of 0.361 MT. Those were the times when the major chunk of orders would come from developed countries like the US and Europe, Canada and Japan. The endorsements by the quality-conscious markets in these countries vindicated SAIL's claim of international competence.

However, stiff non-tariff barriers imposed by two leading plate-consuming markets - first the US in 1999 and then the EU - had an adverse impact on SAIL. These markets became virtually closed, and SAIL exports to them fell to zero in 2000-01, with total plate shipments declining to the level of 149,000 tonnes.

However, at the time when the going got tough, SAIL decided to explore nascent markets like Korea, Taiwan, Philippines and Singapore. Essentially, the focus shifted from the developed nations to the developing Asian economies. In the meantime, SAIL also struck a deal with Europe that allowed export of plates at a reduced rate of duty. All these measures have resulted in export of SAIL plates zooming up to 0.28 MT of plates in 2002-03 -the largest item by volume and second only to HR coils by value, among the nine product categories exported. China, which was the largest importer, has curtailed its offtake this year.
According to Mr Rakesh Gupta, AGM/ITD, there was no formal export plan for plates in 2002-03. However, in view of the extremely positive response from the new markets, SAIL has decided to lay a thrust in this area and export over 0.3 MT of plates in the current financial year. With 0.15 MT having been shipped in April-August, ITD is proceeding as per plan.

"Till recently, the Plate Mill of Bhilai had a lot of idle capacity," explained Dr Dhawan. "So ITD started exploring the possibilities of enlarging existing markets and exploring new ones for Bhilai plates. The results were quite satisfying. Today, we can say with a fair amount of pride and confidence that the export orders have not only enabled Bhilai to run its Plate Mill to full capacity but also contributed handsomely to the profitability of the plant." This, he adds, was possible only because SAIL already had a presence in the international market. "All we had to do was to spread our wings", quips Dr Dhawan.

The market savvy ness has been firmly supported by technological soundness of the product. As Dr Dhawan points out, "Bhilai plates from SAIL are known the world over." And why not? SAIL is the only company in India that exports plate mill plates. Tata Steel, Jindal and Ispat export plates produced in their hot strip mills. Quality-wise, the former process is definitely superior, with better physical and chemical properties. Besides, SAIL's plate mill plates are available in thicker and wider dimensions, produced as per international standards, including ASTM 831, SS 400, British, German and Japanese standards. According to Dr Dhawan, "SAIL plates are the most suitable products for branding in the international market" on HR coils.

One of the most widely traded steel products in the world, demand and supply of HR coils determine price movements of steel in the international market. The SAIL plants ensure an average monthly supply of 25,000 tonnes of HR coils/sheets for export. HR products constitute around 27% of total exports. Tube makers, service centres and projects are two major consuming sectors.

"Our HR coils are very well established in the international market," claims Ms Arti Luniya, DGM/ITD. In fact, SAIL is the only Indian producer apart from Essar, having a technology to produce HR coils in 1800 mm width. SAIL therefore has niche markets for its wider HR coils.
China continues to lead the tally for this product as well. Thailand and some European countries have emerged as other major markets importing SAIL HR products. The Middle East market is avoided for logistical reasons. Explains Ms Luniya, "We operate from the east coast whereas the Middle East countries are closer for those steel companies shipping from the west coast."

At present, SAIL only exports commercial grade products. To gain higher export NSR, ITD has planned to induct some special grades in the export-mix from this year. In fact, this will be an area of focus in the future, says Ms Luniya. "Graduating from commercial grade to special grade has become a necessity for SAIL," she points out. "The market for commercial grade quality is always crowded. Today, we are comfortable because China is importing in a big way. But we must not forget that China is also currently adding a lot of capacity in the green field. What will happen when China becomes a net exporter of steel, especially HR coils, after a couple of years?"

Another area of concern is the fast changing demand patterns. Today there is a great demand for thinner gauge or 2 mm HRC in the international market. There was a time not too far ago when 2 mm HR coils were classified as thin gauge. The situation has changed now. The entire range of SAIL HR coils, beginning from 2mm thickness, now fall in the thick gauge category. Hence the company is unable to obtain the benefits that are tied with thin gauge production.

While SAIL has to contend with few Indian competitors with regard to export of plates, the picture is quite different for HR. Many among the competition also export special grades. For instance, almost 40% of Essar's HRC exports comprise API and corrosion resistant grades; Tata Steel also exports LPG quality steel in special grade. SAIL exported a small quantity of API grade HRC to Bangladesh recently and is in the process of developing AS:490 high tensile grade of HR coils for fabricators in the international market.

Long products-

SAIL exports a very small quantity of finished long products, mainly to the neighboring countries. This is primarily because the domestic demand for long products remains high as a result of a boom in construction.
activities and the inability of Indian producers to enhance existing capacities to provide exclusively for exports. TMT rebars, wire-rods and structural are some of the items from SAIL's kitty of long products that enjoy good trading activity in the overseas market. In the current year, some South East Asian countries have been providing substantial orders for SAIL's long products.

The company is also planning to develop new grades of wire rods for higher-end wire drawing units abroad. Asserts Mr J.S. Chopra, AGM/ITD: "We are trying to explore niche markets for corrosion resistant bars." SAIL is also developing 12 mm TMT for export. Highlighting the need to modernise Bhilai's Wire Rod Mill and upgrade its steel making facilities, Mr Chopra says, "This is a pre-requisite for establishing our electrode quality wire rods in the international market." SAIL is also gearing up to cater to the fast emerging wire drawing units for nails and panel pins.

Semis-

Among semi-finished products, concast billets produced by SAIL are another popular import item in foreign markets. The rerolling industry in neighbouring countries have traditionally preferred SAIL billets, and a number of South East Asian countries have now joined the bandwagon. In 2002-03, billets were the third highest export item for the company, earning over Rs 200 crore in foreign exchange. The trend this year indicates that the overseas demand is continuing. Less than halfway into the current financial year, SAIL has crossed more than 80% of the total billet exports in 2002-03.

"It proves the point that SAIL billets match the international norms," asserts Mr Alok Sahay, AGM/ITD. Consumed mainly by the rebar manufacturing units and some by wire rods manufacturers, SAIL billets are being increasingly preferred by the international trading houses in Myanmar, Nepal, Sri Lanka, Thailand, Indonesia and Phillippines. Referring to billets as "ammunition for re-rollers in India who buy billets from SAIL and also compete with it in the domestic market for finished products", Mr Sahay feels that exports help to "optimise the supply of billets in the domestic market". And so far, the strategy seems to have paid off.
Global vs domestic-

With domestic prices on an upturn, steel exporters have expectedly been designated villains by a section of the market. Even though steel prices in the country are far below the heights achieved in 1994-95, the increase has been directly related to exports. SAIL being the country's largest steel producer with nearly 30% market share, the argument is that SAIL export thrust is creating a short supply situation in the domestic market.

Asked for her views, Ms Shanta Rao, CFM/ITD, retorts: "The allegation is absolutely baseless. Our exports have not even exceeded 10% of our total sales. So, how can this adversely affect a market that consumes a whopping 90% of our production? As it is, Indian steel capacity at around 33 MT exceeds consumption, which is at a level of around 29 MT. Where can the excess production go but to overseas markets?"

Mr A.K. Jain, GM/ITD, feels, "One cannot view export performance in isolation. It has a complementary function vis-a-vis domestic sales. It is always a sound business strategy to opt for exports when domestic supplies threaten to become overwhelming." Considering that the plants are operating at almost their full capacities, there is always a possibility of oversupply if there is a sudden drop in demand for any reason. "We should endeavour to avoid this situation at all cost," he says.

According to Mr Jain, price is not the only criterion for determining export volumes. Market sentiments also play a major role. "We constantly monitor the market for the slightest of hints about oversupply which can result in sharp price dips. It is, therefore, in the fitness of the things to export the excess quantity after fulfilling domestic requirements." Besides, he points out, like any other big business entity SAIL also needs to retain its global presence.

So far, so good. But the company is aware of future challenges. Warns Mr Verma - "We must start preparing for the post-China scenario when all steel exporting nations will have to find another major destination. The US market, which is by far the biggest and which has always given the best prices for our exports, is also now coming out of the recession. We should be ready to service that market when it opens up with an improved product-mix. For this we need to invest further in K modernising our mills."
Techno- Economic Parameters of SAIL Units -

Bhilai Steel Plant -

Bhilai continued to operate most of its units above rated capacity during the year and recorded highest-ever production an best-ever techno economic parameters.

Capacity utilisation -

<table>
<thead>
<tr>
<th>Item</th>
<th>Capacity</th>
<th>2002-03</th>
<th>% CU</th>
<th>% growth over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Metal</td>
<td>4.08</td>
<td>4.4</td>
<td>108</td>
<td>-7</td>
</tr>
<tr>
<td>Concast (SMS-2)</td>
<td>1.425</td>
<td>1.95</td>
<td>137</td>
<td>22</td>
</tr>
<tr>
<td>Crude steel</td>
<td>3.925</td>
<td>4.24</td>
<td>108</td>
<td>7</td>
</tr>
<tr>
<td>Saleable Steel</td>
<td>3.153</td>
<td>3.61</td>
<td>115</td>
<td>7</td>
</tr>
</tbody>
</table>

Highest ever production in other major areas

<table>
<thead>
<tr>
<th>Item</th>
<th>2002-03</th>
<th>Previous best</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolomite (Hirri)</td>
<td>0.68</td>
<td>0.63 (2001-02)</td>
</tr>
<tr>
<td>Total sinter</td>
<td>5.20</td>
<td>5.05 (2001-02)</td>
</tr>
<tr>
<td>Concast</td>
<td>1.95</td>
<td>1.60 (2001-02)</td>
</tr>
<tr>
<td>Crude Steel</td>
<td>4.24</td>
<td>3.96 (2001-02)</td>
</tr>
<tr>
<td>UTS-90 Rail</td>
<td>0.69</td>
<td>0.52 (2001-02)</td>
</tr>
<tr>
<td>Rails to Railways</td>
<td>0.66</td>
<td>0.51 (2001-02)</td>
</tr>
<tr>
<td>Finished Steel</td>
<td>2.57</td>
<td>2.38 (1996-97)</td>
</tr>
<tr>
<td>Wire Rod</td>
<td>0.53</td>
<td>0.52 (2001-02)</td>
</tr>
<tr>
<td>Total Saleable Steel</td>
<td>3.61</td>
<td>3.38 (2001-02)</td>
</tr>
</tbody>
</table>
Rails -

Production and dispatch of UTS-90 rails to Railways went up by 33% and 27% respectively, over 2001-02.

Techno-economic parameter -

- Lowest ever coke rate of 496 kg/thm, with a reduction of 5% over 2001-02. Coal-to hot metal ratio: 0.887 against 0.926 in 2001-02.
- Highest-ever yield of coke oven gas at 311 cu.m/tdc. Previous best 308 cu.m/tdc in 2001-02.
- Highest-ever yield at Plate Mill at 89.7%, rails at 83.05%. Previous best of 87.7% and 80.62%, respectively, in 2001-02.
- Highest number of heats treated through degassing route (RHD/VAD) at 8550 heats against the previous best of 7633 heats in 2001-02.
- Highest-ever average converter lining life of 1483 blows as against previous best of 1039 blows in 2001-02.
- Best-ever BF productivity of 1.72 t/cu.m/day with an improvement of 3%.
- Lowest-ever fuel rate of 531.6 kg/thm, with a reduction of 5% over 2001-02.
Lowest-ever energy consumption of 6.84 Gcal/tes, with an improvement of 3% over 2001-02.

Specific power consumption reduced to 501 kwh against 509 kwh/tonne in 2001-02.

Other major achievements:

- Stabilisation of Sinter Plant-3
- Addition of new facilities in Rail Mill.

DURGAPUR STEEL PALANT-

Durgapur achieved highest-ever production in all units and set a new record in capacity utilisation. BF# 3 was commissioned within a record 17 months and crossed rated capacity in just one month. Capacity utilisation of CC went up at 12.7% and that of saleable steel to 98%.

Production of major items:

<table>
<thead>
<tr>
<th></th>
<th>2002-03</th>
<th>previous best</th>
<th>% growth over '01-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinter</td>
<td>2.56</td>
<td>2.48</td>
<td>3</td>
</tr>
<tr>
<td>Hot metal</td>
<td>1.94</td>
<td>1.84</td>
<td>6</td>
</tr>
<tr>
<td>CCP</td>
<td>0.98</td>
<td>0.95</td>
<td>3</td>
</tr>
<tr>
<td>Crude steel</td>
<td>1.72</td>
<td>1.67</td>
<td>3</td>
</tr>
<tr>
<td>Skelp Mill</td>
<td>0.20</td>
<td>0.19</td>
<td>8</td>
</tr>
<tr>
<td>Merchant Mill</td>
<td>0.33</td>
<td>0.30</td>
<td>8</td>
</tr>
<tr>
<td>Finished steel</td>
<td>0.70</td>
<td>0.67</td>
<td>5</td>
</tr>
<tr>
<td>Saleable steel</td>
<td>1.59</td>
<td>1.53</td>
<td>4</td>
</tr>
</tbody>
</table>
Highest-ever total dispatch of saleable steel of 1.57 MT was achieved during the year (previous best 1.53 MT in 2001-02). Direct despatch of prime saleable steel of 1.12 MT was also highest ever (Previous best 1.06 MT in 2001-02).

- Improvement in product-mix over last year came from:
  - Blooming Mill: 3%; Merchant Mill 8%; Skelp Mill 8%;

Rourkela Steel Plant -

Rourkela recorded all round growth in production, dispatches and improvement in techno-economic parameteres with all the 4 blast furnace in operation. Growth in production at RSP was the highest among all SAIL, units-hot metal by 12% crude steel by 11% and saleable steel by 13%

<table>
<thead>
<tr>
<th>Item</th>
<th>2002-03</th>
<th>Previous best</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinter - II</td>
<td>1.66</td>
<td>1.57</td>
</tr>
<tr>
<td>Hot metal</td>
<td>1.65</td>
<td>1.47</td>
</tr>
<tr>
<td>CCM - II</td>
<td>1.22</td>
<td>1.17</td>
</tr>
<tr>
<td>HR coil (total)</td>
<td>1.29</td>
<td>1.11</td>
</tr>
<tr>
<td>Crude steel</td>
<td>1.48</td>
<td>1.34</td>
</tr>
<tr>
<td>Saleable steel</td>
<td>1.52</td>
<td>1.35</td>
</tr>
</tbody>
</table>

In 2002-03, RSP dispatched highest - ever volumes of the following items:

- HR coil 0.006 MT (previous best 0.058 MT in 2001-02)
- CRNO - 0.0064 MT (Previous best 0.0054 MT in 2001-02)
- Saleable Steel - 152 MT (Previous best 1.37 MT in 2001-02).

Improvements over last year were also achieved in other areas like oven pushing (7%), total sinter production (4%), production at CCM - (71%) and CCM-II (3%) and crude steel (11%).
Significant improvement in product mix over last year was achieved in the following.

![Concast Production (MT)](image)

Wheel & Axle Plant: 3%; finished steel 5%; and saleable steel 4%.

**Techno-economic parameters -**

- Best-ever coal-to-hot metal ratio during the year at 1.007 (previous best of 1.013 achieved in 2001-02).
- Lower-ever coke rate of 573 kg/thm, a reduction of 7 kg/thm (previous best was 580 kg/thm in 2001-02).
- Lowest-ever specific power consumption at 455 kwh/tss (previous best was 457.41 kwh/tss in 2001-02).
- Lowest ever specific water consumption at 4.98 m3/tcs (previous best - 5.25 m3/tcs in 2001-02)
- Highest-ever BOF gas recovery at 81.8 Nm3/tcs (previous best of 69.6 Nm3/tcs in 2001-02).
• Highest-ever yield in continues casting at 97.92%  
(previous best of 97.76% achieved in 2001-02).

• Specific refractory consumption during the year was brought down to 11.84 kg/tcs from 13.02 kg/tcs in 2001-02, a reduction of 9%.

• In 2002-03 labour productivity achieved was 120 tonnes/manyear, the best since inception (previous best: 108.27 tonnes/manyear).

BOKARO STEEL PLANT -

Bokaro fully utilised the opportunity of the favourable swing in the flat products market by maximizing both HR and CR products. BsL's thrust on maximising production with less utilisation of assets to reduce the cost of production continued during the year.

![Saleable Steel (Unit' MT)](image)

CC production crossed rated capacity during the later part of the year.
Highest-ever production -

<table>
<thead>
<tr>
<th>Item</th>
<th>2002-03</th>
<th>Previous best</th>
<th>(in MT) Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saleable steel</td>
<td>3.37</td>
<td>3.33</td>
<td>2000-01</td>
</tr>
<tr>
<td>HR Coils</td>
<td>3.23</td>
<td>3.22</td>
<td>2000-01</td>
</tr>
<tr>
<td>Cast Slabs</td>
<td>2.13</td>
<td>2.08</td>
<td>2001-02</td>
</tr>
</tbody>
</table>

Production growth achieved in all major items over 2001-02.

<table>
<thead>
<tr>
<th>Item</th>
<th>2002-03</th>
<th>2001-02</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinter</td>
<td>4.68</td>
<td>4.37</td>
<td>7</td>
</tr>
<tr>
<td>Hot metal</td>
<td>4.08</td>
<td>3.88</td>
<td>5</td>
</tr>
<tr>
<td>Crude Steel</td>
<td>3.66</td>
<td>3.49</td>
<td>5</td>
</tr>
<tr>
<td>Finished steel</td>
<td>3.24</td>
<td>3.02</td>
<td>7</td>
</tr>
<tr>
<td>Saleable steel</td>
<td>3.37</td>
<td>3.20</td>
<td>5</td>
</tr>
</tbody>
</table>

HR coil (total) - 16%, Plate Mill plates -4%, HR coil for sale - 18%
HR plate & sheet - 34%; CR coil/sheet - 6%; GP/GC - 3%; tinplate - 16%; and
CRNO 28%.
Techno-economic parameters -

- Reduction in specific power consumption from 673.01 kwh/tss to 609.9 kwh/tss.
- Coal-to-hot ratio improved from 1.191 to 1.096.
- Captive generation in PP-1 up from 28 MW to 38 MW.
- Reduction in usage of iron ore fines at SP-2 from 773.9 kg/tonne to 742.6 kg/tonne.
- Total flux consumption reduced from 202.4 kg/tonne to 169.3 kg/tonne.
- Gross metallic input in SMS-I reduced from 1200.7 kg/tcs to 1180.4 Kg/tcs.
- Ferro-alloy consumption in SMS-II reduced from 10.91 kg/tcs to 9.99 kg/tcs.
- 10.5% increase in average converter lining life of SMS-II from 995 heats to 1100 heats.
35% increase in average converter lining life of SMS-I from 362 heats to 489 heats.

- Gross metallic input reduced from 1160 kg/tcs to 1156 kg/tcs.
- Specific power consumption reduced from 516 kwh/tss to 506 kwh/tss.
- Specific lime and calcined dolomite consumption reduced from 74.3 kg/tonne to 70kg/tonne.
- 14% increase in ladle lining life.

**ALLOY STEELS PLANT**

ASP recorded a growth of 16% in production of both crude steel and saleable steel during the year. Sales has WENT up by 17% during the year over last year.

**Other highlights:**

- Export of stainless steel of around 1,000 tones during the year.
- All-time high sales of Rs. 38 crore of value-added products.
- Product development of nitrogen-bearing extra low carbon molybdenum-bearing austenitic stainless steel slabs of grade AISI-316 LN and creep resistant ferritic steel of grade 9CR1Mo for application in nuclear power plants. Slabs have been successfully rolled into plates in RSP and supplied to IGCAR/calapakkam.

- For the first time development of target steel for ballistic testing used by defence with stringent specification of chemistry rolled at RSP and BSL.

- For the first time development of casting of Jackal steel (boron bearing) slabs for OF/Medak.

- First time rolling of smaller section (down to 80 mm) from BBM.

Techno-economic parameters -

All time best performance was achieved in the following areas:

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>2002-03</th>
<th>2001-02</th>
<th>% Imp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke rate</td>
<td>Kg/thm</td>
<td>536</td>
<td>549</td>
<td>2</td>
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<tr>
<td>Coal-to-HM ratio</td>
<td></td>
<td>0.9645</td>
<td>0.951</td>
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<tr>
<td>Energy Consum.</td>
<td>Gcal/tcs</td>
<td>7.78</td>
<td>7.96</td>
<td>2</td>
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</tbody>
</table>

- Reduction in total fuel rate in BFs (BF Coke + nut coke + CDI) from 593 kg/thm to 575 kg/thm.

![HR Coils (Total) (MT)](image)
Salem Steel plant -

SSP produced 83,000 tonnes of saleable steel, recording a growth of 33%. The overall annual sales also went up to a level of 87,000 tonnes.

Other highlights:

✦ Stainless inventory brought down from 22,942 tonnes to 22,000 tonnes.

✦ Export of CR stainless products during the year was 10,630 tonnes.

✦ First time rolling of carbon steel in HRM for the following grade: JIS G 3125, Jackal, IS-10748 GR-4, SCM 435. Also for the first time, low nickel grade materials of ASP (conversion) were exported from Salem.

VISIP -

Production at VISIP during 2002-03 was lower over last year by about 9% in hot metal 8% in crude steel and 3% in saleable steel due to problems in blast furnace and other technological problems. However, production picked up in Q-4.

For the first time VISL developed new grades of steel like EN-21, 46 SCS in bar mill for defense units. Also for the first time intermediate products quality AISI H-13 (tool steel) was rolled in the primary mill for feeding of LFM for forging to final sizes to bring down the cost of production.
SAIL Enters Profit Zone

Surpassing earlier expectations, SAIL recorded a net profit of Rs 242 crore in the last quarter of FY 2002-03. With this, the company entered the profit zone after a gap of nearly five years. While the recovery of the steel market helped the company to turn around, the impressive swing in the financials was based on all-round improvement in physical performance and strengthening of the financial foundation of the organisation. The SAIL Board took the audited financial results of the company for the year 2002-03 on record on 28 May 2003.

SAIL ended FY 2002-03 with a net loss of Rs 304 crore, which is around Rs 1,400 crore or 82% lower than the loss incurred in the previous year. After netting out the capital gains accrued as a result of sale of assets since 2001-02, the company's financials show an impressive actual improvement of around Rs 1,900 crore.

During 2002-03, SAIL also achieved a record turnover of Rs 19,207 crore, which was 24% higher compared to that of the previous year. This was possible due to a 6% improvement in mild steel sales and higher net sales realisation of around 20%. An improvement of 53% in exports also helped to boost the company's turnover. SAIL exported 8.5 lakh tonnes of steel during the year, bringing in a revenue of around Rs 1,000 crore, double the export earnings of 2001-02.

Further, the company achieved a reduction in inventory of semis and finished products to the tune of Rs 433 crore.

Record production of saleable steel at 10.08 million tonnes by SAIL's four main integrated steel plants not only showed a robust 7% growth but also strengthened the bottom line for the steel major. All major units were operating at around 100% capacity as the financial year came to a close. With consistent improvement in techno-economic parameters and a well-implemented strategy, the company effected cost savings of around Rs 450 crore during 2002-03.

The performance assumes greater significance in view of the fact that during the year there was a steep hike in prices of all major inputs of steel making. The price of imported coking coal went up by 6%, indigenous coal by 10%, boiler coal by 15%, ferro-manganese by 4% and nickel by 17%.
Effective financial management enabled SAIL to reduce its debt burden by over Rs 1,000 crore during FY '02-03. The average rate of interest on the borrowings also came down by around 1.5%.

Over the last few years, SAIL has implemented numerous steps for strengthening its fundamentals while ably withstanding the recession in the steel market. The measures taken include continuous cost reduction, technological improvement, lowering the level of borrowing, persistent efforts to bring about an attitudinal change among the employees through planned communication and optimum utilisation of resources.

The company further brought down its employee strength by 10,000 to a level of 137,000 through the implementation of a VR scheme and natural separations during 2002-03.

Commenting on the performance of the company during 2002-03, Mr V.S. Jain, SAIL Chairman, noted: "After reaching the turning point towards the end of the last financial year, the organisation is confident of making the current financial year a profitable one. The mood is upbeat with success on all fronts, including impressive performance in exports. Based on the current trend, the company's performance is set to improve further in the current financial year.

SAIL transacts Rs. 100-cr. E-business-

SAIL moved its e-commerce efforts up a gear in the just-concluded financial year. Not only was the process of reverse auction stabilised, but the company also made a maiden entry in the realm of forward auction in 2002-03. In all, the company's total business transaction over the Internet crossed the figure of Rs 100 crore during the period.

The forward auction of prime products was for over Rs 50 crore. Among the major items sold were HR coils and plates, IU (industrial use) rails, structural, MS plates, SAILMA plates and TMT. Simultaneously, the plants sold secondary steel worth around Rs 8 crore through the e-commerce route, generating additional revenue over 5% for the different items. The entire process of forward auction that was taken up on a trial basis, met with a fair amount of success as the company conducted several transactions over a period of two months towards the end of the last fiscal.
Hailing the success of forward auction as yet another step forward in SAIL’s e-commerce enterprise, Mr VS. Jain, Chairman, SAIL, said: "Our attempt has been to put SAIL in tune with future technology.

In addition, SAIL entered a new phase in the area of e-commerce during the year by consolidating its gains in reverse auctions on the Internet, launched in the previous fiscal - a feat that won SAIL the honour of being amongst the first few Indian PSUs to successfully do so. Through online bidding, also known as an 'invisible process', the company procured caustic soda, welding electrodes, transformer coils, lamps and fittings, pipes and stone bricks worth around Rs 52 crore. On an experimental basis, SAIL also sold some idle assets during the year.

SAIL has been making intensive efforts to leverage its limited expertise in e-commerce to find a complete solution for online trading. Amendment in the existing rules and procedures in tune with the requirements of e-commerce, obtaining clearance from the CVC, assessment of skill requirement, skill upgradation of employees, vendor education and creating a customer base are some of the key initiatives that are already paying dividends. The service provider for all these online trading activities has been Metal junction Pvt. Ltd, the joint venture between SAIL and Tata Steel.

SAIL, JCSSI Safety Awards -

The Safety Awards of SAIL and JCSSI (Joint Committee on Safety, Health & Environment in the Steel Industry) were presented by Mr S.C.K. Patne, Dir (Tech.)/SAIL & Chairman/JCSSI, at a function held at MTI auditorium in Shyamali, Ranchi on 7 May 2003. Several dignitaries and national trade union leaders, and senior executives of the Indian steel industry graced the occasion.

The Safety Awards instituted by SAIL includes the Steel Minister’s Trophy for 'Best Safety Performance' and Chairman SAIL's Silver Plaque for achieving 'No Fatal Accident'. The 'Ispat Suraksha Puraskars' of JCSSI are given to plants, mines and individuals for outstanding performance in promoting safety, health and environment in the steel industry and mines.
On this occasion, awards were presented for the years 1999, 2000 and 2001 (performance of previous years), both at organisation and individual levels. Eighty-nine collective and 109 individual awards were distributed to different units of SAIL, IISCO, MEL, Tata Steel and RINL. Collective awards consisted of trophies, while individual awards like Safety Man of the Year and for best entries in essay, calendar and poster competitions consisted of mementoes, cash awards and certificates.

Efforts made so far by the steel plants and JCSSI to improve safety, health and environment in the workplace have been paying dividends. There has been substantial improvement in quality of work life through declining trend of accidents in member plants.

Statistics of fatal, reportable and non-reportable accidents in 2003 are already showing significant reduction in comparison to 2002. The member plants and mines of JCCSSI are expected to end the current calendar year with significant reduction. This achievement is a tribute to the yeoman role played by JCSSI and its various sub-committees.

JCSSI is a unique bipartite learning forum at the industry level operating in the highest tradition of participative management for the last 30 years. Formed in 1973 as an apex bipartite forum at the national level, the pioneer body has 54 members, including 26 management representatives, 19 trade union representatives, 5 experts and 4 committee executives.

JCSSI is continuously endeavouring to play a key role in improving the existing standards of safety, health and environment amongst its member organisations through various programmes and activities. It offers practical suggestions to plug loopholes, effect improvements and does a stupendous job in spreading the message of safety to the grassroots level.

**Unequivocally YES**

Though Corporate Social Responsibility (CSR) is the latest management buzzword, the concept is not alien to Public Sector Enterprises (PSEs) in India. Amongst the salient objectives of PSEs, as enshrined in 'The Industrial Policy Resolution of 1956', are:
Promotion of redistribution of income and wealth

Creation of employment opportunities

Promotion of balanced regional development

Assisting development of small-scale industries

Promotion of import substitution

Thus, since their inception in 1950s and 60s, CSR remains deeply ingrained in the management ethos of the PSEs.

Having been a beneficiary of SAIL's (including erstwhile HSL's) contribution to society (1959 to 1982) and later, being a SAIL employee (from 1983), I am covering my impressions of the enormity of SAIL's CSR-role in these two phases.

**Those were the days -**

Nostalgia overwhelms me when I remember my dad (one of the first 100 employees of BSP) narrate the story of early days of Bhilai, circa 1956. The personal hardships and efforts of the pioneers transformed the skyline of halcyon and sylvan fields, forests and cluster of villages. Commissioning of BSP, the pulsating industrial giant, in 1959 dramatically improved the entire socio-economic fabric of the region.

Most employees came from humble backgrounds to make a living by dint of their hard work. Their toil was rewarded with a township equipped with best schools, stadia, Healthcare and recreational facilities etc. which ushered a revolution in the quality and standard of their lives. Above all, their job, career and future were secure.

With equal opportunities to all in areas of education, sports, arts, social and cultural activities, the second generation of Bhilaians have made their presence felt at national and international levels.

The plant and the township spawned indirect employment opportunities in geometrical proportions mainly in the services sector and ancillary industries which mushroomed around the plant. Soon, Bhilai became the pride of its citizens.
All this holds equally true for SAIL's other steel plants and townships. Today one is sure to find at least a little bit of SAIL's second generation in country's premier educational institutes and top organizations. Many of these hi-fliers belonged to lower and middle income group who never, in their wildest dreams, imagined that they would achieve such glorious heights. No wonder, Pandit Nehru called SAIL's steel plants the temples of modern India.

Aboard the SAIL ship-

Only after joining the SAIL team in 1983 did I realise that SAIL, apart from being a major steel producer and a good employer, was also a model corporate entity shouldering its CSR above and beyond expectations.

Steel maker to the

SAIL set up its production facilities in line with Government's economic development priorities and for making the country self-reliant in steel. The Rail Mill at BSP and Wheel & Axle Plant at DSP were set up for the Indian Railways. Similarly, the special plate plant at RSP was for catering to the stringent quality requirements of Defence sector.

A vast network of SAIL marketing offices and stockyards ensured that iron and steel is available all over the country for boosting industrial development. Till 1992, SAIL supplied iron & steel to customer segments in terms of prices and priorities laid down by the Joint Plant Committee set up by Government of India.

SAIL's Research & Development Centre at Ranchi has, over the years, immensely helped the steel plants to keep pace with the global developments in steel technology, thereby contributing handsomely to import substitution and meeting the emerging needs of the end-users. SAIL, through its various technical and management institutes, created a vast pool of personnel with expertise and experience in steel making.

SAIL's CSR did not end with steel and its employees. Over last 45 years, SAIL has accorded due attention and priority to protection of environment, flora and fauna of its plants, mines and townships. Development of infrastructure, drinking water, sanitation and improvement in literacy levels in peripheral areas surrounding its plants and townships...
have been other noteworthy achievements. SAIL’s Mahila Samajs have been instrumental in empowering women and the lesser privileged.

At times of calamities and disasters like floods, droughts, earthquakes and the latest tsunami, SAIL has always contributed substantially, both as a steel maker as well as a concerned Corporate Citizen.

Winds of change -

By late 80s, the PSEs, including SAIL, had fulfilled their major objective of being the backbone of country's socio-economic development and taking India to commanding heights in heavy industry and infrastructural sectors. With advancement of technology and opening up of barriers, the world shrank and became a seamless market place. Given its strategic geographical location, size, natural resources and manpower strength, India could no longer afford to remain isolated.

In 1991-92, the Government launched a series of economic reforms that changed the direction and magnitude of country's development. With the entry of private companies in many hitherto protected industries under PSEs, competition intensified multifold. While this was exactly what the doctor had ordered (pun unintentional) for India to move towards being a global economic power, it was a jolt for the PSEs lying cocooned and sheltered from the challenges of open market forces.

Yet, even during the most difficult and trying times in the last decade of 20th century, while trying to find its feet as a profitable commercial organisation in a changed economic environment, SAIL did not shy away from its CSR and zealously continued all initiatives and efforts made prior to economic reforms. Today, SAIL has successfully survived the challenges of global market forces and emerged a winner with a fantastic turnaround, wiping accumulated losses with healthy profits.

SAIL has done far more than its due share of its CSR and would enlarge its CSR role in coming times. Yet, not many know of SAIL's sacrifices and achievements in shouldering its CSR. Isn't it time we let the world know? For that, I plan to write a book of 1,000 pages because an essay of 1,000 words is grossly insufficient.
At a time when cost control is holding sway in SAIL, Bhilai Steel Plant has led the way by ensuring savings to the tune of Rs 48,000 per day through ID fan conversion at the Gas Cleaning Plant (GCP) #4 of SMS-I. In addition to the enormous power savings, the conversion will also help in containing emission far below the prescribed norms and also ensure nearly 100% reliability in terms of proper functioning. Another benefit from ID fan conversion would be interchangeability of ID fans since the other two GCPs have similar fans which will in turn help in the standardisation of bearings and couplings, low inventory, ease in maintenance and operation, better control of furnace draught, etc.

RMD has already initiated action for implementing the plan to enhance the production from the captive mines in tandem with SAIL’s target to enhance the production of hot metal. The major projects in hand include:

- Installation of a 600TPH Crushing & screening plant at BOM
- Augmentation of loading capacity at BOM
- Development of Central block at MIOM to produce 4.3 MTPA, and development of South Block at KIOM to produce 4.25 MTPA
- Development of Taldih block
- Opening a new mine at Thakurani

Projects for improving the quality include -

- Optimisation of washing plant of MIOM for Alumina reduction in fines through introduction of stub-cyclones in place of hydro-cyclones
- Improvement in granulometry of lump of MIOM by replacement of old liners
- Introduction of Batac Jigs for Alumina reduction in fines of MIOM
- Reduction in siliceous gangue in fines of KIOM
- Automation of instrumentation system for two Remer Jigs for reduction of Alumina in fines of BIM.
Cost saving, the hi-tech way -

The conventional method of V I coking control has a number of drawbacks. It is labour-intensive, has high specific heat consumption and supply of heat flux can vary from the exact demand of the process. As a result, coke quality and battery life often deteriorate. A need was thus felt to devise a sophisticated monitoring technology which could eliminate the drawbacks and also be environment-friendly.

The Appropriate Automation Promotion Centre (AAPC) of RDCIS, in collaboration with the Government of India's Department of Information Technology, has recently broken ground in this direction by developing an automated multi-module system which synchronises heat demand of a battery with actual heat supply using a combination of feed forward and feed backward mode of heating control. Based on real-time data on coal blend quality and blend moisture, it continuously calculates the heat demand by a battery and the fuel supply is then controlled automatically. The system incorporates a high level of automation instrumentation, online data communication and networking with process control software.

The technology is pollution-free and has the potential to reduce specific heat consumption by 7%. In addition, it gives high coke quality with extended battery life.

What is commendable is that the entire system was developed in-house, and the total cost involved was only about one-tenth of the cost of development of such a system abroad. Further, it also took into consideration the more rigorous working environment of Indian coke ovens.

Today, when technology empowers the nation, RDCIS can rightly claim to be at par with its overseas counterparts like Rauturukki of Finland, Hoogovens of Netherlands, Ameno Associates of Japan, etc., in developing state-of-the-art technology in the area of coke making. And, at RDCIS, the AAPC is reckoned as an indispensable tool for research optimisation. With modern facilities at their disposal, the experts of this division are committed to make SAIL a world-class steel producer by facilitating its migration to a higher technology platform.
In its pursuit to extend specialised services to the SAIL steel plants, RDCIS has also recently developed and introduced a new technology for igniting the sinter mix in band *1 of Sinter Plant at Bokaro Steel Plant. Called 'Curtain-shaped flame-based ignition system for sinter mix ignition', the technology has reduced fuel gas consumption by about 50%. The innovation is expected to save gaseous fuel worth nearly Rs 1.75 crore per annum.

The new system involves mounting small capacity burners, assembled together in the form of modules, in a single row and fitted on the roof of the ignition hood. A curtain-type flame is obtained from these burner modules and the high intensity flame impinges on the sinter bed enhancing improved heat transfer and instantaneous ignition of the sinter mix. This design is characterised by a smaller size ignition hood, thereby enabling lower heat losses.

The main feature of the system is that the curtain-shaped flame directly ignites the top layer sinter mix, whereas, in the conventional system the heat transfer takes place mainly through radiation. The modified furnace length is of only 3 metres compared to the earlier length of 12 m. The furnace roof height has also been lowered to 500 mm from 1400 mm. Due to reduction in furnace volume by 90%, cost of refractories as well as cost of their maintenance have come down considerably. This technology has also proved to be more environment-friendly, due to lower generation of flue gases.

The successful introduction of this technology at Bokaro has encouraged SAIL to plan its use in all the sinter plants of the other integrated steel plants as well. The consequent annual saving for SAIL is estimated to be over Rs 12 crore.

SAIL is a 'business superbrand'

SAIL was crowned a Business Superbrand for the period 2004-06 at a glittering ceremony held at Hotel Hilton Towers in Mumbai on 8 September 2005. Obtaining this honour puts SAIL in the circle of an elite group that is seen to represent the best practices in brand management. The award was presented by Superbrands India Pvt Ltd, an independent arbiter on branding that promotes the discipline of branding and pays tribute to exceptional brands.
Superbrands programmes operate in over 25 countries. An independent judging panel of experts awards Superbrand status. Different juries exist for the different geographical regions to ensure that only the most deserving of brands attain the credential. Only brands that are scored highly by the panel qualify for the status and to be featured in the publication. The shortlist that the panel scores is itself derived from a list of thousands of potential brands.

Tough competition is synonymous with the Superbrands tag. SAIL was selected a Business Superbrand from amongst 750 brands. The total number of brands crowned as Business Superbrands this year is 60 and SAIL is a proud member of the coveted group. The Superbrand status received this year is the result of the hard work put in by the SAIL collective ever since SAIL came into being as a company.

Warehousing at SAIL Bracing up for 2012 -

The necessity for an efficient supply chain infrastructure occupies centrestage against the backdrop of SAIL's Corporate Plan 2012 that envisages marketing 17 million tonnes of steel by 2012.

The basic objective of the formation of the Warehousing group in SAIL's Central Marketing Organisation (CMO) in 2002 was to provide focused attention to this aspect of service so that a high level of satisfaction among customers by timely delivery of quality material could be ensured.

In fact, we at SAIL are proud that about 150 major customers across the country are presently being catered to through door delivery. On an average, the Warehousing group ensures delivery of about 3.6 lakh tonnes of steel products to customers of SAIL - including almost all major companies in India, whether in the government, public or private sectors or project authorities -through this channel per year.

Strict adherence to standard operational norms has earned us ISO 9001:2000 certification, which enables us to ensure that material reaches our customers in good condition, on time, and to manage the entire gamut of operations efficiently.
SAIL's finished steel reaches every corner of the country via 40 warehouses, consignment agencies, a large number of authorised dealers, sub-dealers, conversion agents and several service centres.

The responsibilities of the core Warehousing group at CMO HQ in Kolkata also include estate management and marketing services. The Estate Management Department is the custodian of all 'property' of CMO/SAIL worth about Rs 350 crore and its upkeep is the responsibility of our EM wing of the Warehousing group. A well-oiled mechanism ensures that there are no major breakdowns, and in the event of any, prompt remedial action is initiated.

Measures taken to ensure operational efficiency at SAIL warehouses -

- Proper stacking of materials to enable easy tracing and retrieval of material from among the various products stored at a warehouse so that there is no delay in deliveries to be made to customers. This has substantially reduced truck turnaround time, a major criterion in SAIL's Customer Satisfaction Index (service performance feedback).

- Construction of mobile and stationary covered sheds using inhouse resources in some of warehouses to prevent damage to high-value material from weathering.

- Development/installation of innovative tools and tackles for ensuring damage-free handling. This has resulted in significant savings for the company.

- Rational utilisation of equipments to minimise breakdown time and ensure proper maintenance and upkeep of assets.

- Development of land at several warehouses. Roads have been repaired/relaid so that proper layout of material and approach is facilitated.

- Timely finalisation of various contracts for seamless operations.

Key projects get the nod -

On 29 July 2005, the SAIL Board approved the proposal for installation of a new slab caster with associated facilities for Bhilai Steel Plant's SMS-II at an estimated cost of Rs 520 crore. The new single-strand
caster having a capacity of 0.80 MTPA will help the plant to produce value added/special quality of steel besides ensuring higher utilisation of the converters.

Installation of the slab caster with associated state-of-the-art facilities like RH degasser and ladle furnace will further augment BSP's capabilities to produce high quality plates and rails conforming to the stringent specifications for the Indian Railways. The plant has recently commissioned a Long Rail Mill for production of rails up to the length of 78 m and welded panels up to the length of 260 m.

Production from Bhilai's SMS-II has already substantially exceeded its capacity of 1.5 MTPA, following technological improvements like higher converter lining, introduction of sleeve tap-hole practice and better maintenance practice. The converter availability and its utilisation have also improved.

The addition of a new caster along with associated facilities for secondary refining to the existing facilities of three slab casters, one combi-caster and one bloom caster, will enable the shop to enhance steel production. In the ensuing period, the installation of the new caster will facilitate modernization of other casters without any loss of production as envisaged in SAIL's Corporate Plan 2011-12. The steel produced in this shop is used as a feedstock for BSP's Plate Mill and Rail & Structural Mill. The project is envisaged to be completed within 26 months.

The projects sanctioned are in addition to the capital schemes valued at over Rs 3,000 crore, which are under various stages of implementation. The projects form a part of the company's growth plan that envisages enhancing hot metal capacity from 13 MT in 2004-05 to 20 MT by 2011-12.

**Among the key projects that were granted approval are:**

- **Modification of Mae West Block system at BSL's HSM,** which is likely to improve the consistency in the quality of the plant's HR products. The project is scheduled to be completed in two phases by 2007-08 at a cost of around Rs 92 crore.

- **Installation of hydrochloric acid regeneration plant for Pickling Line 2** at Bokaro at a cost of around Rs 50 crore. The project on completion
will improve the pickling process that essentially involves removal of oxide layers from the surface of CR coils. Besides, this will ensure adequate absorption of HCL fumes, preventing any pollution in the ambient air.

- Installation of power supply facilities for setting up new Oxygen Plant at Bokaro on BOO basis also received in-principle approval.

- Setting up cryogenic air separation unit on BOO basis at VISL.

Besides, the SAIL Board cleared the proposal for procurement of two BOXN rakes under the Indian Railways' Wagon Investment Scheme, for transporting limestone from Jaisalmer to the steel plants at a total cost of Rs 26 crore. The companies investing in rail wagons are assured of supply of guaranteed number of rakes with 10% freight rebate.

Implementation of ERP for Bhilai, at a cost of Rs 44 crore and installation of hot metal desulphurisation unit at RSP’s SMS-II (Rs 49 crore) are two other projects that were given in-principle approval.

Presently, capital schemes valued at over Rs 3,500 crore are under various stages of implementation in the SAIL plants/units.
SAIL PLANS FOR THE FUTURE -

We have observed it all during the last few years - the pain of hitting the bottom of the business cycle and the pleasure of making the best of an upbeat market. We have learnt a lot while surviving the tumultuous weather - prime lesson being sustained efforts to improve efficiency. Company today stands tall in the corporate world with a strong financial foundation, a highly motivated team of employees and a vision to retain its leadership in an expanding market. Our growth plan is the road map for attaining this goal.

The merger of IISCO with SAIL, which has since been effected, is a milestone in company's march into the future. This step is not only in tune with the global trend of consolidation for successful enterprises but also is a step towards strengthening the company by building better synergy. Moving ahead we look forward to taking more such strategic steps to secure raw material source while enhancing the market spread.

Recent exercises across the organisation have helped us to identify the targets for the year as well as the direction to be taken for reaching our goal for 2012. The major task before us is to ensure timely completion of all the envisaged projects. Central to all past successes has been the commitment and unity of the employees for realising organisational goal. As we progress to tackle bigger and vital issues, the SAIL team needs to stand up as a single unit to overcome all hurdles.

One of the biggest achievements in recent past has been improving consistency in production. But in spite of the best of efforts there have been surprise breakdowns destabilising the plans. Hence, the need to ensure uninterrupted operation in all units are the prime concern. Today, the environment is positive. After a short wavering, the market is stable and the future for steel looks bright. The Indian economy is all set to grow at a faster pace and the successive announcements by the Government have been indicating huge investments in infrastructure. All these combine to draw a rosy picture for the steel industry.

Growing competition brings in greater opportunities for us to excel. Sail is well aware of the emerging scenario and I am sure that you all are ready to face competition with heroic zeal. Your commitment and dedicated effort helped the organisation survive through the worst of times
and reach new heights of glory when situation improved. The future throws up new challenges and I am confident that the SAIL team will emerge the winner.

Sail plan is to take the company to new heights so that it dominates the future with strength and vigour as a major producer of quality steel.

**SAIL’S Q3 PROFIT AT RS 685 CRORE**

Steel Authority of India Limited (SAIL) posted a profit after tax (PAT) of Rs 685 crore on a turnover of Rs 7,176 crore during the third quarter of 2005-06. With this, SAIL has recorded consistent profit for the 12th consecutive quarter. However, the PAT is lower as compared to Rs 1,514 crore achieved by the company during the corresponding quarter of the previous year. SAIL plants produced 3.6 million tonnes (MT) of hot metal, 3.4 MT of crude steel and 3.03 MT of saleable steel during October-December 2005 recording a growth of 8%, 6% and 3% respectively over the corresponding period last year (CPLY). Saleable steel production at 8.59 MT during April-December 2005 was 8% higher over CPLY.

SAIL also announced an interim dividend of Rs 516 crore for the second consecutive year at the board meet held on 27 January 2006, in which the company’s unaudited financial results were taken on record. The interim dividend has been computed at the rate of 12.5% on paid-up equity capital.

The lower profitability was essentially on account of lower level of steel prices and higher costs of input, mainly coking coal. In view of the over capacity of steel in the international market with China becoming an exporter, there has been pressure on steel prices. The rise in the prices of coking coal alone put an additional burden of over Rs 1,000 crore during April-December 2005 on the steel major. Market is now stable and it is expected that prices of imported coking coal may decline now.

SAIL’s PAT for the first nine months of 2005-06 was Rs 2,935 crore as against Rs 4,139 crore in the CPLY. With an overall improvement in techno-economic parameters, the company improved its average capacity utilisation to the level of 107% as against 104% achieved during the last financial year.

SAIL recorded a turnover of Rs 21,330 crore during April-December 2005. The company reduced its borrowing by Rs 1,240 crore to the level
of Rs 4,530 crore as on 31 December 2005 and reduced its interest charges by Rs 98 crore during the first nine months of 05-06. SAIL's debt-equity ratio further improved to 0.36:1 as on 31 December 2005 as against 0.58:1 recorded on 31 March 2005. Having equivalent deposit with banks, the company is virtually debt free.

In the meantime, SAIL has made steady progress in the implementation of its corporate plan 2011-12. Capital schemes valued at around Rs 3,900 crore are under various stages of implementation across the company. In addition to these ongoing projects, the SAIL Board has granted 'final' approval for four new schemes and 'in-principle' approval for four other schemes at a total estimated cost of more than Rs 400 crore on January 27, 2006. The key projects that were granted approval in board meet were 'Installation of 2Dri Ladle Furnace in Continuous Casting Shop of SMS II at Bokaro', 'Installation of Enterprise Resource Planning at Bokaro', and 'Installation of Bloom Caster in Steel Melting Shop at VISL.

Some of the major schemes that got commissioned in the recent past include upgradation of Blast Furnace# 4 and ERW Pipe Plant, and installation of cast house slag granulation plant in blast furnace # 1 at Rourkela Steel Plant (RSP), replacement of stands in Merchant Mill at Bhilai and installation of a ladle furnace at Durgapur.

SAIL TO SUPPORT PRESERVATION OF NATIONAL MONUMENTS -

Steel Authority of India Limited (SAIL) is not only helping the nation meet its infrastructure requirements, it is now also going to lend a helping hand in preserving the country's cultural heritage. SAIL has decided to spend close to Rs 1.5 crore as part of its corporate social responsibility initiative, on conserving, preserving, restoring, maintaining and landscaping five ancient monuments at Lodi Gardens in the Capital.

A memorandum of agreement to this effect was signed on 10 January 2006 at New Delhi between SAIL, the Archaeological Survey of India (ASI) and National Culture Fund (NCF). The signatories were Mr C. Babu Rajeev, Director General (ASI), Mr Vimlendra Sharan, Member Secretary (NCF) and Mr Raman Kumar, Executive Director (Personnel & Administration) SAIL.

Apart from promoting art and culture, SAIL has been taking several other initiatives to make a meaningful difference to the lives of a large section of the people in society. Some of the key programmes run by the company as a part of its corporate social responsibilities on a sustained
basis, pertain to providing primary medical, health and educational facilities to the people living in and around the SAIL townships. Besides, SAIL has tied up with NACO to reduce the impact of HIV infection and spread awareness about the disease.

**ICWAI AWARD FOR SAIL 3RD YEAR IN A ROW**

Steel Authority of India Limited (SAIL) was awarded 'Good Performance Award', amongst leading Public Sector organisations by the Institute of Cost & Works Accountant of India (ICWAI) in its 'National Award for Excellence in Cost Management 2005' held at Vigyan Bhawan, New Delhi on 22 December 2005. This is the third consecutive year when the efforts of the company in cost management have been appreciated by the ICWAI.

Evaluated by a jury of eminent professionals headed by Mr T.S. Krishnamurthy, former Chief Election Commissioner of India and Mr V.K. Dhall, Member (Admn.), Competition Commission of India, the award is a testimony to the unrelenting efforts made by the company's collective over a period of time to set new standards of excellence in the field of cost management.

SAIL has been putting thrust on cost reduction measures for several years. Focus on cost reduction and productivity improvement through systematic application of new technology and strong awareness to reduce cost at all levels of operation, has been maintained in good phase of business also. A number of innovative steps has been introduced within the organisation resulting in substantial benefits.

A major step in this direction is continuous accent on research and development, which enabled SAIL to reduce cost through process improvement, quality improvement, and introduction of innovative techniques such as auxiliary fuel injection to reduce specific consumption of expensive inputs. SAIL used the technique of benchmarking in various areas like BF productivity, coke rate, energy consumption, power consumption, labour productivity etc. in its plants for exploiting full potential of the assets.

Simultaneously, the company saved significantly with the success of several other initiatives such as performance based procurement, consolidating business transactions through e-commerce, competence enhancement through HRD initiatives, enhanced automation, manpower rationalisation and waste management. SAIL also achieved significant reduction in interest cost/finance charges by prepaying/ restructuring costlier loans after negotiating with banks/financial institutions. Ms Neeru Abrol, GM (F&A) SAIL received the award on behalf of SAIL.
TIlE YEAR 2006 A BIRD'S EYE VIEW

The term 'volatility' aptly sums up the happenings in the global iron and steel industry in 2005. While wide fluctuations in prices caused primarily by rise in prices of basic inputs (coking coal and iron ore) coupled with reasonable growth in major end using segments like automobile, consumer durables and construction, the supply of steel by the major producers continued at a high pace. However, the surging output from Chinese mills, surpassing the domestic demand and emergence of China as a net exporter had a depressing effect on steel prices particularly those of HR coils. In order to stall the continuous decline in prices during April to December, 2005 production cuts were resorted to by a handful of producers in Europe and USA. Chinese Govt. came out with a steel policy seeking consolidation and restructuring of the domestic steel industry in the long term in favour of ten large units holding 50% share of total Chinese production.

The world crude steel production in 2005 and the annual average growth rate in the past five years by various regions are shown in table I.

It is interesting to see that China's share in world production has more than doubled from 13% in 1995 to 31% in 2005. Global apparent consumption of finished steel crossed 1 billion mark in 2005, reflecting a growth of over 3% over the level achieved in previous year. The growth in production outstripping the growth demand by nearly 3%, has led to inventory built up and consequently the pressure on steel prices particularly those of flat products.

By all indications, 2006 is likely to usher in a new phase in the global steel industry amidst initial subdued activities. India, which has been a front-runner in growth of steel industry in 2004 and 2005, is well set to march ahead in the growth phase of world steel industry, only next to China.

A tentative assessment of apparent consumption in the country during the first 9 months of the current fiscal shows a growth of more than 9% over the previous year. On an annualised basis this translates into nearly 37.5 million tonnes (MT) of finished steel consumption in 2005-06. Even at an average compound rate of 8%, a 60 MT of domestic consumption by 2011-12 and 110 MT by 2019-20 appears within reach. For 2006 the demand is likely to be strong from the construction sector as new projects in power, roads, urban development (flyovers, bridges, residential and commercial
complexes), ports and airports etc. provide bright impetus for demand for reinforcement, structural steel including plates, pipes and tubes and corrugated sheets.

Table - I

Global Production of Crude Steel (Million Tonnes)

<table>
<thead>
<tr>
<th>Country</th>
<th>2005</th>
<th>2004</th>
<th>2000</th>
<th>CAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>331.5</td>
<td>338.6</td>
<td>308.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Nafta</td>
<td>126.9</td>
<td>134.0</td>
<td>135.4</td>
<td>(-) 1.3</td>
</tr>
<tr>
<td>USA</td>
<td>93.9</td>
<td>99.7</td>
<td>101.8</td>
<td>(-) 1.6</td>
</tr>
<tr>
<td>South America</td>
<td>45.3</td>
<td>45.9</td>
<td>39.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>31.6</td>
<td>32.9</td>
<td>27.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Asia</td>
<td>583.8</td>
<td>508.7</td>
<td>331.9</td>
<td>12.0</td>
</tr>
<tr>
<td>China</td>
<td>349.4</td>
<td>280.5</td>
<td>127.2</td>
<td>22.3</td>
</tr>
<tr>
<td>Japan</td>
<td>112.5</td>
<td>112.7</td>
<td>106.4</td>
<td>1.1</td>
</tr>
<tr>
<td>S. Korea</td>
<td>47.7</td>
<td>47.5</td>
<td>43.1</td>
<td>2.0</td>
</tr>
<tr>
<td>India</td>
<td>38.1</td>
<td>32.6</td>
<td>26.9</td>
<td>7.2</td>
</tr>
<tr>
<td>CIS</td>
<td>112.9</td>
<td>113.1</td>
<td>98.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Russia</td>
<td>66.1</td>
<td>65.6</td>
<td>59.1</td>
<td>2.3</td>
</tr>
<tr>
<td>World</td>
<td>1129.4</td>
<td>1066.5</td>
<td>847.7</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Source: IISI, CAGR = Compound Annual Growth Rate

The imperatives for growth in consumption of steel in India in 2006 are manifold.

First, in order to realise the full potential of growth in the coming months from the segments that would be instrumental in generating demand for steel, the rate of investment as a per cent of GDP must be stepped up from the current level of 27% to at least 29% in 2006. This is achievable in view of
the strong thrust on public-private-partnership, the setting up of India Infrastructure Fund and

Table - II

Percentage growth in major industrial segments

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>8.5</td>
<td>8.1</td>
<td>3.2</td>
<td>5.2</td>
<td>4.8 (6.4)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>9.8</td>
<td>13.6</td>
<td>6.0</td>
<td>8.8</td>
<td>8.9 (9.2)</td>
</tr>
<tr>
<td>Capital Goods</td>
<td>24.8</td>
<td>17.9</td>
<td>10.4</td>
<td>12.6</td>
<td>15.7 (13.8)</td>
</tr>
<tr>
<td>Consumer Durables</td>
<td>10.2</td>
<td>36.1</td>
<td>(-) 6.4</td>
<td>(-) 14.0</td>
<td>13.6 (15.3)</td>
</tr>
<tr>
<td>Total Industry</td>
<td>8.4</td>
<td>12.7</td>
<td>5.8</td>
<td>8.0</td>
<td>7.8 (8.6)</td>
</tr>
</tbody>
</table>

Source: CSO figures in brackets refer to corresponding period of last year

special purpose vehicle, the announcement of record level of FDI in steel and other sectors and the implementation of Bharat Nirman schemes in right earnest in 2006 with a total investment of Rs 1,74,000 crore in the next five years. This would generate demand from rural housing, roads, water supply, sanitation and minor irrigation activities and is likely to have a multiplier impact in raising the per capita consumption of steel in rural areas. Keeping in view the extreme fluctuations witnessed in the past growth pattern of steel sector in the country, the critical issue remains to be the long-term sustainability of steel. Second, the growth pattern of the steel intensive sectors in India in the recent period raises hopes for a mini industrial revival by the next fiscal. Table - II summarises the industrial performance.

Among the manufacturing sub-segments, the manufacture of machinery and equipment and transport equipment has observed growth rates ranging from 11 to 13%. The increasing steel-intensity in these sectors provides hopes for a sustained demand for rounds, structurals, plates and hot rolled and cold roller sheets in the coming months.
A question often raised relates to catching up of India with China in steel consumption. In 1997 the gap in apparent consumption between China and India was to the level of 80 MT. After a gap of 7 years the difference has now reached to a level of 233 MT. While the current GDP growth rate in China is around 9.9%, India's growth at 8% (Q4 of 2004-05) is no less significant. However, in terms of industrial production and other related factors, China has scored over India, which is summarised in table III.

The positives in favour of India pertain to a sound financial and legal system, lower capital output ratio leading to less wastage of capital resources and lower non-performing assets of the Banks (8% of GDP in India against 35% of GDP in China) and the coming years may only strengthen the efficacy of these factors.

Table - II

A Comparison : China and India

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production (%) (Dec. 2005)</td>
<td>16.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Share (%) of Secondary sector (Mfg., Mining, Electricity, Gas, Water supply) and Construction ) in GDP (2004)</td>
<td>53</td>
<td>27</td>
</tr>
<tr>
<td>Investment / GDP (%) (2004)</td>
<td>46</td>
<td>24</td>
</tr>
<tr>
<td>FDI flows : 2004 ($ bn)</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>Gross Savings as % of GDP (1997-2004)</td>
<td>43.4</td>
<td>22.6</td>
</tr>
<tr>
<td>Labour Productivity (CAGR : 1990 - 2003)</td>
<td>7.3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Source : Economist & Mackenzie

Third, China is going to play an important role in shaping the future of steel industry in India in 2006. China has become a net exporter of steel in 2005 (27.6 MT exports of saleable steel and 27.1 MT imports). Chinese exports mostly contain commodity grade HR coils, wire rods, billets, Reinforcement bars and plates. China is still an importer of thinner gauge/special grade HR coils, value added CR, Electrical Steel sheets, higher dia pipes etc. China has a marginal cost of production of US $ 297 per tonne of HR coils and therefore, is able to export HR coils at US $ 350 FOB to Far East and South East markets. India's imports of HR coils at more than 1.4 MT in the first nine months of the current fiscal register growth exceeding 42% compared to the previous year's level and although imports from China com-
prises an insignificant share of the total imports during April - December 2005, the threat of low-priced imports from China is affecting the long term market sentiments in India. However, there are reports of ongoing restructuring of Chinese steel industry, closure of inefficient small units, strict monitoring of bank loans for undertaking capacity expansion, all of which are leading to firming up of domestic price level in China.

Table - IV

<table>
<thead>
<tr>
<th>World's biggest steel producers</th>
<th>Production in 2004 (MT)</th>
<th>Sales ($ bn )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mittal Steel</td>
<td>66</td>
<td>33.1</td>
</tr>
<tr>
<td>Arcelor*</td>
<td>51</td>
<td>41.7</td>
</tr>
<tr>
<td>Nippon Steel</td>
<td>32</td>
<td>31.3</td>
</tr>
<tr>
<td>JFE</td>
<td>31</td>
<td>25.9</td>
</tr>
<tr>
<td>POSCO</td>
<td>30</td>
<td>20.9</td>
</tr>
<tr>
<td>Bao Steel</td>
<td>21</td>
<td>19.5</td>
</tr>
<tr>
<td>US Steel</td>
<td>21</td>
<td>14.0</td>
</tr>
</tbody>
</table>

* Source: IISI / Economist

* Mittal includes ISG and Kryvorizhstal, Arcelor includes Dofasco.

Due to frequent changes in the factors affecting demand and supply of steel in the domestic market with differentials between flat and long narrowing down, an average realization of Rs 20,000 per tonne (US $452 at the current rate of exchange) may not appear attractive for fresh capacities to emerge as envisaged in National Steel Policy. This would necessitate maximum thrust to bring down cost of production by technological upgradation and other long-term solution to limit cost of inputs and transportation.
Besides capacity enhancement, the growth plan adequately addresses the need of the SAIL plants and other units towards eliminating technological gaps, interlinking product profile with the growth segments and focusing on customer centric business processes. The long term plan is to build sustainable competencies.

To start with, new facilities are being added to produce 100% of steel through the Basic Oxygen Furnace (BOF) and energy-efficient concast route. SAIL's product portfolio is being enriched with the component of finished steel in total saleable steel increasing from the current level of 82% to 96% by 2012. Evidently, the rolling mills are being upgraded with state-of-the-art technology along with high level of automation to facilitate the ongoing thrust on special quality steel along with newer products to enter into new segments including auto sector. All processes are being upgraded to enable SAIL to take the competition head on.

The projects will enable inclusion of more value added products in SAIL's product basket. The Corporate Plan is a roadmap for the company to retain its market leadership.

The build up is being achieved in phases, initially by realisation of the existing potential followed by de-bottlenecking and linked investments and finally capacity addition through major investments. More importantly, the company aims to maintain its debt equity ratio at 1:1 while pursuing the investment plan.

Well Begun -

The journey has already begun. By now, as the company completes the first year of its Corporate Plan 2011-12, capital schemes valued at around Rs 3,800 crore are under various stages of implementation across the company. Some of the major schemes that got commissioned in the recent past include upgradation of Blast Furnace # 4 and ERW Pipe Plant, and installation of Cast House Slag granulation plant in Blast Furnace # 1 at Rourkela Steel Plant (RSP), replacement of stands in Merchant Mill at Bhilai and installation of a ladle furnace at Durgapur.

The upgradation of Blast Furnace # 4 Annapurna of RSP has been completed at a cost of Rs 118 crore. With its recommissioning, hot metal output from this furnace alone has gone beyond 2,000 tonnes per day and the daily hot metal production from all the four Blast.
Furnace shops has crossed 6,000 tonnes. As a result the plant, for the first time, is expected to achieve its annual capacity of 2 MT of hot metal.

Further, the upgradation of Rourkela's ERW Pipe Plant is also complete. This has enabled RSP to enhance annual production of ERW pipes from 42,000 tonnes to 75,000 tonnes in higher grade of API pipes up to X-70 category to meet the requirement of the oil & gas sector.

The project work for setting up a new bloom caster in Durgapur Steel Plant (DSP) is in full swing. The project envisages installation of a bloom caster of capacity 0.85 MT, a 130-tonne ladle furnace in Steel Melting Shop (SMS) and one 110 tph reheating furnace at the Blooming & Billet Mill at a total sanctioned cost of around Rs 272 crore. Additionally, one 130-tonne ladle furnace has been already commissioned in DSP. When completed, the four-strand bloom caster along with the existing two billet casters will enable the plant to process almost the entire quantity of liquid steel through the concast route. Presently, 60% of liquid steel is processed through the concast route.

Continuing with its thrust on enhancing production of steel through the concast route, the SAIL Board has approved a project for installation of a new slab caster with associated facilities for SMS-II of Bhilai Steel Plant (BSP) at an estimated cost of Rs 520 crore. The new single-strand slab caster having a capacity of 0.80 million tonne per annum (MTPA) along with the existing facilities of three slab casters, one combi-caster and one bloom caster, will help the plant to produce value added/special quality steel besides ensuring higher utilisation of the converters.

The installation of the slab caster with associated state-of-the-art facilities like RH degasser and ladle furnace will further augment BSP's capabilities to produce high quality plates and rails conforming to the stringent specifications for Indian Railways. The plant has recently commissioned facilities for production of longer rails up to the length of 78 metres and welded panels up to the length of 260 metres.
Enhancing Efficiency -

To substitute 10-15% of coking coal, SAIL is implementing a strategy to introduce alternative fuel injection techniques in all the blast furnaces across SAIL plants. The SAIL Board has granted in-principle approval to a proposal to install coal dust injection (GDI) system in BF # 4 at RSP, BF # 2 & 3 at Bokaro and BF # 3 & 4 at DSP. The first phase of the Corporate Plan will, therefore, see SAIL implementing either tar injection or GDI technologies in all its blast furnaces. The decision to implement alternative fuel injection techniques in SAIL was primarily taken in view of uncertainty being faced by the steel industry globally with respect to coking coal. GDI technology has already been introduced in four of Bhilai Steel Plant's seven blast furnaces and two of Bokaro Steel Plant's five blast furnaces.

The company has planned to upgrade and rebuild 12 of its coke oven batteries (COBs) in plants by 2012. The revamping of the batteries will help SAIL plants to meet higher requirement of coke for enhanced hot metal production in the coming years. Work on four of the batteries has started. The SAIL Board has recently granted in-principle approval to rebuild RSP's COB # 4 at an estimated cost of Rs 195 crore in order to meet environmental norms while implementing its massive growth plan. The work on rebuilding of COB # 5 at Bhilai, COB # 1 Rourkela and COB # 5 at Bokaro is in progress. The campaign will get a further boost when the project for augmentation of coking coal storage facilities in coal handling plant of Bokaro is completed. Recently, the SAIL Board has accorded the approval for rebuilding of COB # 10 at IISCO Steel Plant (ISP), the recently amalgamated unit of SAIL, at an estimated cost of Rs 319 crore.

In addition, modification of the Mae-West Block system at BSL's Hot Strip Mill is scheduled to be completed in two phases by 2007-08 at a cost of around Rs 92 crore. Two other key projects that are presently under finalisation at Bokaro include installation of a hydrochloric acid regeneration plant for Pickling Line II, and an air turbo compressor and an oxygen turbo compressor at Oxygen Plant. Automation of Tandem Mill-II in Bokaro's Cold Rolling Mill is one of the projects that have been approved during the current financial year. Revamping of Galvanising Lines I & II of RSP's Cold Rolling Mill is also in the pipeline.
Concern for customers -

The production of TMT grades of wire rods at Bhilai Steel Plant (BSP) is set to increase following the completion of ongoing revamping of the mill’s B-strand. The mill is equipped with four strands (A, B, C and D) and the revamping of its B-strand was long overdue. Earlier, only C&D strands of wire rod mill had the provision to produce TMT grades of wire rods. Using higher automation facilities, the mill is expected to produce thinner wire rods having uniform properties along the product length and high dimensional tolerance. Besides, the incidence of frequent complaints like dog marks and compact binding without loose ends is likely to get nearly eliminated.

Another key project at Bhilai which directly aims at addressing the long-felt requirement of its customers is installation of hydraulic automatic gauge control & plan view rolling in plate Mill. On completion, the project will enable the plant to achieve closer tolerances and improve yield of the finished plates.

Strengthening Systems

Augmentation of DSP’s power distribution system, installation of hot metal desulphurisation unit in SMS - II at Rourkela and upgradation of power supply facilities fro BSP’s Oxygen Plant are some of the other projects on the anvil. SAIL’s roadmap also includes a number of key steps designed to improve efficiency and performance.

The SAIL Board has cleared a proposal for investing Rs 26 crore for procurement of two BOXN rakes under the ‘Wagon Investment Scheme’ of the Indian Railways, for transporting limestone from Jaisalmer to steel plants. The companies investing in rail wagons are assured of supply of guaranteed number of rakes with 10% freight rebate.

Going ahead with its plan to implement Enterprise Resource Planning (ERP) across its plants, SAIL has begun the process of implementation at Bhilai. The project entails standardisation and integration of different modules of production, marketing and finance across the organisation.
Something special -

SAIL's Corporate Plan 2011-12 also includes an investment of about Rs 2,000 crore for three of its special steel plants - Alloy Steels Plant (ASP) at Durgapur, Visvesvaraya Iron & Steel Plant (VISL) at Bhadravati and Salem Steel Plant (SSP) at Salem. This will ensure increase in the production of saleable steel from SAIL's special steel plants from a level of 0.379 MT in 2004-05 to 0.993 MT by 2011-12. VISL was given a final nod for setting up a cryogenic air separation unit on build-own-operate basis.

In view of the enhanced production of hot metal, the total metallurgical coking coal requirement of the SAIL plants is likely to increase from the current level of 13 MT to around 17 MT by 2011-12. At the same time, SAIL requires to enhance raising of iron ore at its captive mines from the current level of around 20 MT to 35 MT by 2011-12. The plan includes developing two major mechanised iron ore mines - at Rowghat in the western region and Chiria in the east. Both the mines will be developed with latest technology to ensure assured supply of required quantity of quality iron ore to SAIL plants. Besides, SAIL's corporate plan envisages an investment of around Rs 1,000 crore in collieries at Tasra, Ramnagore, Chasnalla and Jitpur.

Steps for enhancing production of iron ore and new means to augment supply of coking coal from domestic as well as foreign sources are being taken to meet this major challenge.

Plans are on the anvil to enter into strategic investments/tie-ups for coking coal blocks in India and abroad to ensure assured supply of Coking coal. Under its Corporate Plan SAIL aims at setting up of pellet plants (one at Bhilai and another near Manoharpur), which would enable utilisation of huge iron ore fines generated during the mining operations, apart from reducing cost of hot metal production.

Human Resource -

Thrust on human resource development continues with a renewed focus on inculcating a greater value orientation across the company. A series of initiatives are being taken to improve the competence level of the employees in tune with changing technologies, customer demands and market dynamics. Accordingly, training modules have been redesigned with a clear focus on competence mapping, skill gap analysis, multi-skilling and
multi-tasking apart from imparting training on new technologies of steel making. Efforts are also on to put a system in place to institutionalise the sharing of knowledge among the employees. SAIL targets to improve its labour productivity to a level of around 170 tonnes of crude steel (tcs)/man/year by 2006-07.

Achieving cost competitiveness remains a prime target of SAIL's future plans. Today in SAIL, the focus of the sustained cost control exercise is on shortening cycle time, reducing specific usage of inputs, eliminating wastages and improving yields. The work has begun in right earnest. The challenge before SAIL is to ensure that the projects are implemented without time and cost overruns.

SAIL towards a Global Enterprise

In business, there is no such thing as standing still. Therefore SAIL has to grow. Will there be sustenance of demand? As India moves out of its sedentary rate of growth and growth momentum picks up, steel industry has an important role to play in the path of progress. In India per capita steel consumption of 32 kg is way below the global average of 120 kg, not to speak of the developed country average of more than 400 kg. This shows the obvious growth potential of the steel industry. Even by moderate estimates, if steel demand per capita grows to the level of China, the country with which India is often compared with at global level, that is roughly 2.5 times that of present consumption. Opportunity beckons and SAIL as largest Indian steel maker is in a vantage position to exploit these opportunities.

The challenges of growth

Past experience suggests that steel demand will grow with incremental dips in demand. To get the most out of ensuing opportunity SAIL has to grow fast. Steel industry has certain limitations - that of being a cyclical and capital intensive business. As SAIL is virtually a zero-debt company with substantial cash flow it has enough capabilities to overcome these limitations.

Merger and acquisition is often considered as a major vehicle of faster growth. When two or more businesses merge, the new entity brings the two separate operations together as one new business. Operations gets combined, separate customer bases become one, and the management and
employees are assessed and sorted into a combined work force. In the case of a business acquisition, because of the formal sale of one business to the other, the acquired business becomes, in effect, a subsidiary of the business doing the acquiring. This gives the acquiring business total control over both the operations and profits of the acquired business.

Should merger and acquisition be an option for SAIL? Any hypothesis becomes widely acceptable if it has sufficient proof going for it. What better proof in favour of mergers and acquisitions in steel industry than the fact that in a span of 25 years a wire rod manufacturer in Indonesia has spectacularly expanded his business to become largest steel producer in the world, largely through an acquisitive strategy. Therefore time is ripe for even SAIL to explore this avenue.

There are many avenues of growth. Most common vehicle of growth has been building up new plants and facilities. However, Greenfield buildup require all the basic resources (conventional 5M's) in good measure as well as infrastructural facilities. Greenfield projects take a longer time as it mostly depends on management of tangible physical infrastructure and resources. Expansion is another common avenue of growth. However, physical limits of existing setup puts a cap on brownfield expansion. On the other hand, merger and expansion depend on management of business intangibles, in addition to access to capital.

Advantages galore

If carried out properly, merger and acquisition offers numerous advantages. Biggest among these lies in savings of both cost and time. Yet, it does not end there. Fast entry to new markets, expanded market share, acquisition of established name brands, distribution channels and operational infrastructures. The right merger or acquisition can help achieve any or all of these goals.

Everything else being equal, the new 'combination business' should have the potential to become even more profitable than the two businesses operating independently. This potential for increased profitability comes as a direct result of both sales increases and operational efficiencies (opportunities to reduce total costs) that accrue in addition to elimination of competition. The multiple advantages of merger and acquisition accrue from a wider perspective. Few of these are:

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<table>
<thead>
<tr>
<th>Scale build up</th>
<th>Purchasing companies in the same space to gain revenues, streamline cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand acquisition</td>
<td>Unique Market Position of targeted entity</td>
</tr>
<tr>
<td>Skill supplement</td>
<td>Acquiring complimentary skill sets of target entity</td>
</tr>
<tr>
<td>Geographic Expansion</td>
<td>Access to New customer Base, into previously inaccessible geographic markets</td>
</tr>
<tr>
<td>Technology</td>
<td>Adding key technical capabilities or acquiring a new technology</td>
</tr>
<tr>
<td>Channels</td>
<td>Finding new ways of delivering the products and services</td>
</tr>
<tr>
<td>Product</td>
<td>Increase in Breadth and Depth of Product Line</td>
</tr>
</tbody>
</table>

**Merger & acquisition - with care**

The right merger or acquisition can help in achieving any or all of these goals. Therefore, tremendous value can be added through mergers and acquisitions. However, investment in a green field project and merger and acquisition need different sort of prowess and capability. Since M & A is to a great extent management of intangibles, these transactions are always complex. Firstly, a seller should be available. Second, price should be favourable; third, but no less important, it should not lead to friction. Even in post merger scenario, success is often determined by how well integration costs are managed, organisational cultures are integrated, key employees are retained and assets are maintained.

To ensure an all round positive outcome, M & A require a core set of capabilities which looks easier on paper but difficult to implement. Few of these are:
• Continuous search for opportunity
• Create database of potential companies
• Acquiring customer demographic data of targeted company
• Interviewing target’s customer base to verify position
• Create market and financially based screening procedure
• Identifying market opportunities that an acquisition strategy can exploit
• Integrate market condition in negotiation process through appropriate timing
• Providing credibility to investors and bankers.

SAIL either has to develop these capabilities or hire the services of experts in the field. Properly done, economies of scale, which could be a factor of combining of operations, better strength to achieve globalisation of business with improved and larger number of products, cost rationalization owing to better bargaining power with suppliers on account of increased volumes, etc are the major benefits that will accrue to SAIL. Any softening of business environment should be considered as an opportunity to consider acquisition / merger. A combination of operational expansion and merger and acquisition will help SAIL become a global enterprise in a short span of time.
TARGET TURNDOWN

SAIL with substantial improvement in the performance of all the steel plants and particularly the special steels plants. This will only be possible by sustaining the momentum and improving performance further. SAIL must improve by at least 8-10% in key business parameters of production, sales should must cross the level of 11 million tonnes. Sales should match the higher production volume. Thrust on export has to continue and we should reach a target of one million tonnes. The task is daunting if the market is depressed, but a lot easier when the market gains normally. The current scenario shows that the market is supportive.

After investing substantially in the modernisation of steel plants, SAIL have caught up with the backlog of technological upgradation. Investment from now onwards have to be dictated strictly by the requirements of the market, adherence to statutory norms, and for essential replacements. In line with this, some of the projects that have been taken up are:

- Long rail project at the Rail Mill at BSP
- Modernisation of ERW pipe plant at RSP
- Rebuilding of Coke Oven Battery # 1 at RSP

Some similar proposals are under evaluation.

Relentless efforts towards cost reduction managed to keep us afloat in one of the most difficult periods for the steel sector. The historical best figures in key technoeconomics are indicative of the success in this area. SAIL have immense potential in this area. Company must strive for cost reduction of around Rs 700 crore in the current fiscal. Other than variable operating cost, fixed cost reduction will also be a focus area. Efforts on manpower rationalisation would continue to improve labour productivity and cost competitiveness.

SAIL embarked on the path of restructuring, and knew that the path was rough and tough, but self-confidence and belief in strengths helped to steer through a period of crisis. Biggest strength is skilled and dedicated manpower, which has proved its resilience time and again.

Recent month have been the period of steady ascent in the company's performance. The returns have progressively been higher, each quarter of the financial year being an improvement over the previous. All
major production units have shown sustained improvement in performance. Durgapur Steel Plant entering the net profit mode and Rourkela Steel Plant earning cash profit have further strengthened the conviction to each greater heights. The Central Marketing Organinsation has not only ensured greater generation of revenue but also have been able to bring down stocks. The Raw Materials Division also successfully managed the total requirement of raw materials. The credit for this sustained growth and success goes to the SAIL team.

The success of endevaour has been well recognised the National award of Excellence for cost Reduction, presented to SAIL by Insitutute of Cost and Works Accountants of India recently at Delhi is a matter of pride for SAIL . But should not forget that the results of today are built on the efforts made earlier. No dynamic organisation in today's situation can afford to rest on its oars. The mood for SAIL is upbeat now. It is told that high morale breeds invincibility. That is exactly what should be steering as we move ahead into the future.

Analysis have predicted that the upsurge in steels industry will continue for some years. SAIL must be conscious of the fact that all major producers are planning ahead to enhance their capacity to take advantage of the growth in steel market. It is, therefore, the right time to draw road map for the future.

While doing, so SAIL must not lose sight of the sudden scarcity of inputs and alarming increase in raw material cost. In order to remain competitive while proceeding with the growth plan, company have to keep working in containing our cost of operation - whether through systematic application of new technology or strong awareness to reduce cost at all levels of operation.

SAIL have to stay focused on optimum utilisation of the potential of all available assets, improve product - mix and technoeconomic parameters and expedite implementation of research and development schemes.

Competing in a fast moving market calls for faster decision making. Probably this has remained an area of weakness for SAIL. Company must pay all attention to keep improving our track record for becoming more agile.
STEPPING UP THE MOMENTUM

Since the steel industry was expecting the upturn in prices to continue for a longer period, given that the last downturn of the cycle had lasted for around three years.

The continued low (in some cases negative) growth of the steel-using segments like automobiles, capital goods, consumer durables and construction has aggravated the anxieties of the domestic steel producers. Unless demand rises significantly, and soon, there will be little to cheer about. The situation dictates that we in SAIL maintain the thrust on cost control and aggressive marketing strategies as well as uphold our commitment and efforts to restructure of company so that SAIL can effectively realise the benefits to have planned for.

The SAIL plants achieved a growth of 14% in finished steel production, which included a higher component of flat products, during H1 of the current fiscal. The company also benefited by simultaneously curtailing arisings. With continuing emphasis on cost reduction measures, critical techno-economic parameters like yields, coke, rate, energy consumption, etc., showed significant improvements. However, the company incurred cost escalations on account of higher cost of coal, power and fuel, freight and exchange rate fluctuations, which were partly offset by cost control measures.

SAIL’s restructuring plan has also now gathered momentum with our shareholders and the employees’ unions gradually appreciating the company’s need to divest non-core business areas and extending their support to the restructuring plan. SAIL have already started negotiations with the National Thermal Power Corporation for its majority interest in power plants at Durgapur, Rourkela, and Bokaro. The bidders for Bhilai’s Oxygen Plant have completed their own assessment of the unit and the process is scheduled to begin shortly for Salem Steel Plant. As for the IISCO joint venture, SAIL have shortlisted three leading international companies - TPE of Russia, Mitsui of Japan and BHP of Australia - as possible partners. They are now in the process of conducting their assessment of the IISCO units and mines.

SAIL is in the process of acquiring competitive advantage through a multi-pronged approach. Recognising the importance of providing high-
end value added services to the customers. SAIL has decided to set up a joint venture service centre company at Bokaro through which we will be customising some of the flat products manufactured in the SAIL plants to the specific needs of the customers. The benefits that accrue in the process will be enlarged market share and improved profitability. SAIL's joint venture partner will be Bansal Mechanical works, a manufacture of steel tubes and poles having steel service centres at Jamshedpur and Calcutta. SAIL will have a minority share of 40% in the proposed company called SAIL Bansal Service combine the strengths of SAIL, BMW and the marketplace.

In yet another intiative, SAIL is planning to use the internet to power its business processes for sustainable competitive advantage. SAIL have entered into an agreement with two other steel producers - Tat Steel and kalyani Steels - towards setting up an independent, neutral electronic marketplace for steel on the world Wide Web which will help market the products more efficiently and improve sales realisations. In the long term, SAIL will benefit from the e-business, as leverage of domain experties. SAIL and Tata steel have 40% stake each, while Kalyani has the remaining 20% in the venture.

SAIL would like to reiterate at this point that restructuring remains SAIL's real ticket to prosperity even as it simultaneously continues to take other initiatives. The changes have begun started yielding results and should be carried to their logical end so that the company can soon return to a position of profitability I believe that a united effort by all of us should make this a certainty.

LET'S MAKE THE SAIL BEST OF THE BETTER DAYS AHEAD

The fruits of hard labour are always sweet', so goes the adage. As the curtains opened on the new financial year, SAIL organisation moved to the centre - stage. Achievements were many. In terms of performance there were records galore - be it production of hot metal, crude steel, saleable steel, techno - economic parameters or domestic sales and exports.

Achievement of SAIL is a clear reflection of the tireless efforts made over the past few years, when the organisation in particular and steel industry in general was afflicted with the worst ever crisis. Riding on the strength of a growth of 7% in production and 6% in sales, SAIL likely to reduce the loss by more than 70%. The steel market was supportive with a steady firming up of steel prices, but what mattered most were enhanced
operational efficiency, quality consciousness and cost-effective performance.

Sound financial management helped to reduce the debt by RS 800 crore and outgo on interest payment by RS 300 crore while intensive cost reduction drive entailed a savings of Rs 400 crore.

Performance of SAIL only goes to prove potential which, if fully harnessed, can make the company most competitive in terms of cost of production, quality and other technoeconomic parameters.

As the company reached the finishing lines last fiscal most of the units were producing at almost 100% of their capacities. Well! there is reason to feel happy for achievement, we still have a daunting task ahead. SAIL is in sight of turnaround as ended the last financial year. Now the challenge before company is not only to achieve the turnaround in the current fiscal but also to go on improving the bottomline to make up for what we lost over the past few years.

In a dynamic situation there can be not let up in our efforts. In the fast changing economic scenario what matters most is the financial soundness of the organisation. All routes - be it improving quality of the product, reducing cost of production or enhancing the share of value added product - lead us towards the same goal.

Let me present a simple correlation. Every additional tonne of steel produced by the company means around RS 6,000 more in terms of profit. A 10% increase in production and key efficiency parameters into Rs. 1,000 crore improvement in our bottomline. This is no tall talk. It is simply achievable and is based on the confidence gained from our performance in recent past.

The need of the hour is so to hone our skills and focus on our common goal. The steel market would be increasingly vulnerable to unpredictable business cycles. Hence the key to our survival and future prosperity is continuous improvement in operational efficiency, fine tuning our production to the requirement of the market and generating higher margin from each tonne of steel we produce.

Will it not be a thrilling moment for all of people when SAIL re-enter the zone of profitability, The products maintain the competitive edge and company is back in the reckoning, commanding the respect it deserves in domestic as well as the international market?
LEADING THE RACE TO THE FUTURE

The Indian steel landscape is changing rapidly. Announcement of the National Steel Policy, which aims for a production level of 110 million tonnes of steel by 2019-20, has set the direction of the future. The writing on the wall is clear. A number of new players are set to enter the market with top end technology and staying power. Mergers and acquisitions will give the steel industry a new identity. Capacity expansion plans by existing players have started being implemented with serious intent. It is more than obvious that the Indian steel industry will witness a high degree of competition in the coming years.

But the developments more as opportunities than challenges. India's largest steel makers, have to stay ahead in the race. The competition will provide the environment to further improve efficiencies and spur plans to incorporate the latest technologies.

We have the resources and the required strengths also possess a positive mindset and the will to win. The topmost priority for us now is to develop a faster pace and longer strides to lead the race to the future.

Our eyes are focused on the lofty heights that are to be achieved, so that India can be counted among the top few global steel producers. In the changed scenario, effort should be to go the whole hog to achieve the best in terms of quality, service and cost-effectiveness. The need of the hour is single-minded determination to achieve the set milestones and targets. In this endeavour, we are likely to encounter many a roadblock. But with the power of our purpose, the resilience of our experience and our commitment to remain the numero uno, we will easily be able to overcome such hurdles.

To emerge winners, our growth rate has to be above the industry average. SAIL can make this possible on the strength of our strong financial foundation, skilled manpower base and well-laid infrastructure. The New year has vital significance for SAIL since it encompass the first landmark in Corporate plan 2012. In order to achieve the target set for 2006-07, we need to grow by 6% to 7% in the next financial year. Considering strengths, this is eminently achievable also need to move forward with meticulous planning to achieve 22.5 million tonnes hot metal production capacity by 2012. Along with this, we need to brace ourselves with the latest technology, achieve highest standard in techno-economics, cost-effectiveness, quality and operational efficiency, and proactive in handling the emerging challenges. With the IISCO becoming a unit of SAIL, the company's marketing pain also has to be reoriented to optimise the synergies of product-mix and maximise revenue.