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INTRODUCTION

This News Letter is containing the write-ups on the following:

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Enhancing Global Competitiveness of Steel Products through Lean Manufacturing

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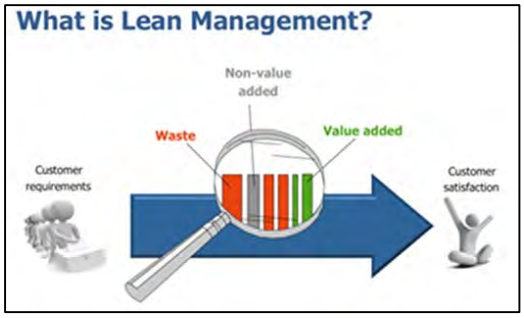
Lean Management Consultant &
Life Member, IIM DC

The need

Today the greatest challenge for iron & steel companies is to survive and grow in global steel market. This is possible by enhancing the global competitiveness of iron & steel products. During last few years there have been tremendous innovations and developments in iron and steel manufacturing technology and most of the plants have adapted the modern technology and operating software. But modernization of manufacturing technology alone is not enough, now in 21st century companies have to change their way of thinking and managing the complete business system also, which can be made possible by adapting "Lean Manufacturing".

Lean Manufacturing is an effective way of managing business based on the Toyota Production System, which has made Toyota consistently grow its business during last 70 years from unknown entity to the leading top-quality auto company of the world. Based on several academic researches it was found that main cause of growth of Toyota is its unique management system based on certain philosophy and tools, which can be applied in every kind of manufacturing and service organization including steel industries. Focus of Lean is to enhance customer value and profit margins by detection, elimination and prevention of waste. After the recent global economic crisis, all progress seeking companies of western and eastern world are trying to learn and adapt Lean management.

What's Lean Manufacturing?



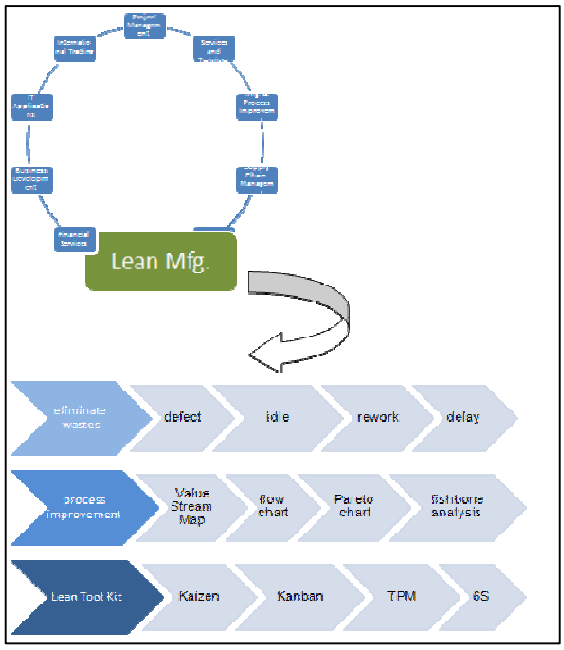
Lean manufacturing is a set of philosophy, concepts, tools and techniques to enhance customer value and supplier's profitability by eliminating waste. In the context of Lean, waste is defined as *any business activity that absorbs resources but adds no value*. There are eight kinds of waste generated in any system; Overproduction, defects, excess inventory, waiting, unnecessary transportation, over processing, motion and untapped human potential. Non-lean companies are not aware about these wastes. The cost of waste in a manufacturing company ranges between 15-40% of sales turnover. Success of companies will depend upon "how less waste is being generated by their processes? Value can be described by four factors; quality, speed of delivery, services and cost (Qsec). Most of companies plan to grow their business by capital intensive capacity expansion, but lean focuses growth of business by reducing the waste. One of the practical descriptions of Lean is "*reducing the order to delivery lead time*". Lower the lead time, faster the process velocity, higher the throughput, lower the cost, more salability, higher profit margins, and higher customer satisfaction.

The current way of manufacturing is based on traditional production planning system decided by marketing forecast and past performance, called as "push production", which is no more relevant. Contrary to push production "Lean Manufacturing" is based on "pull production", in which customer demand rate decides how much to be produced and when?. By lean implementation, processes are made waste-free to meet uninterrupted customer demand with best quality at minimum cost. In

the future years, mega steel plants based on economy of scale may not be able to serve the customer with desired speed and flexibility. Changing the paradigm from "push to pull production" is the very first step of "lean transformation".

How Lean makes dramatic improvements?

Current way of steel manufacturing is focused on quantitative outputs using forecast driven "push production". Forecasts are extrapolation of past sales data based on certain "assumptions". Assumption-based production or "push production" results in building up of high inventory and high rate of waste that eats away profit margins making the product non-competitive.



Lean manufacturing makes production as per customer demand or "pull production". For making the manufacturing "Lean" the current way of departmental management system is transformed to "value stream management", in which entire supply chain of a product family right from raw material source to production and delivery to ultimate consumer is considered as single value-creating chain. Lean implementation improves the entire value stream to ensure that waste generation is minimized by using lean techniques to improve operations, equipment, quality, process velocity, delivery speed and customer experiences during entire transactions through a highly effective lean management system. Lean begins with change in thinking, way of working and culture of the organization. It involves lot of education & training to develop problem solving skill in the people and establish an effective Lean Management System to plan and monitor efficient operations.

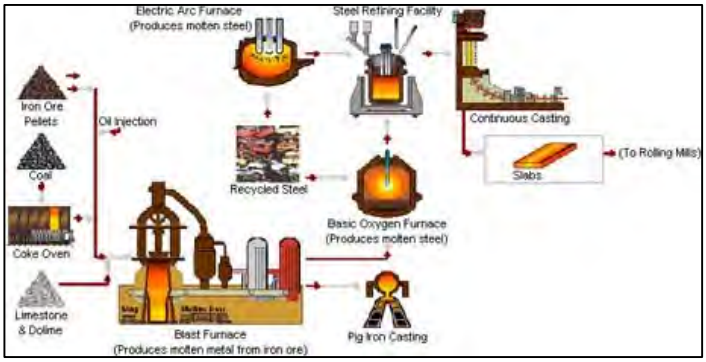
How to implement Lean Manufacturing in a steel company?

The core idea of Lean Manufacturing is to maximize **customer value** while minimizing waste. Simply, lean means creating more value for customers with fewer resources.

A lean organization understands customer value and focuses its key processes to continuously increase it. The ultimate goal is to provide perfect value to the customer through a perfect value creation process that has zero waste.

To accomplish this, lean thinking changes the focus of management from optimizing separate technologies, assets, and vertical departments to optimizing the flow of products and services through entire value streams that flow horizontally across technologies, assets, and departments to customers.

Eliminating waste along entire value streams, instead of at isolated points, creates processes that need less human effort, less space, less capital, and less time to make products and services at far less costs and with much fewer defects, compared with traditional business systems. Companies are able to respond to changing customer desires with high variety, high quality, low cost, and with very fast throughput times. Also, information management becomes much simpler and more accurate. This is generic concept followed in all kinds of manufacturing organizations.

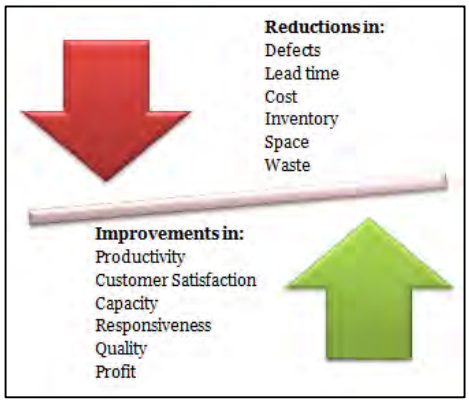


Let us take an example of a steel company "Indian Steel Co. (ISCO) which is annually producing two million tons of sponge iron and one million ton of wide variety steel products that includes; Sponge Iron, Steel Bars, Wire Rods, Hot Rolled Coils and Cold Rolled Coils. Company is equipped with DRI Iron Rotary Kilns, Mini Blast Furnace, Electric Arc Furnaces, Secondary Refining, Continuous Casters, Bar Mill, Wire Rod Mill, Steckel Mill and Cold Rolling Mill facilities. Due to fluctuations in market demand and unstable productivity, company is making forecast based production and maintains a total inventory of about 5 months. High inventory and large quantum of unknown waste make the production cost quite high, resulting to reduced competitiveness, poor sales and bad cash flow. Company is always under pressure to meet the financial requirements of operations and bank interests. Due to poor performance and cash crisis it is not able to upgrade its technology, attract good quality people resulting to declining growth of organization. If the management system is not improved, it will be really difficult for the company to survive in the market. Due to such situations many steel companies of the world are closing down. In fact this is a true picture of many steel companies of India also.

The above situation can be definitely improved by implementation of Lean Manufacturing. Let us see how ISCO can undergo "Lean Transformation"?

Lean implementation is transformation of people, processes and systems of the company through the following steps:

- **Commitment:** the most important factor is the commitment of CEO of the organization. CEO has to sincerely invest time, effort and money for implementing Lean. Personal time invested to set the goals, monitor and review the improvement process. Efforts to motivate people lead the team and ensure discipline. Organize financial resources for education, training, implementation and consulting intervention. If any of the above three elements is missing, there cannot be lean transformation. The other activities of commitment include to trigger "lean thinking" through awareness training of the people, forming a empowered "lean promotion committee", appointing a "change agent" to coordinate all activities and selection of a competent "lean sensei" (coach).
- **Diagnosis:** Selection of a pilot value stream for lean transformation. In case of ISCO the business processes can be organized in 4 value streams; sponge iron value stream, flat product value stream, bar product value stream and wire rod value stream. Out of the 4 value streams one pilot value stream; for example "Flat Product" can be selected for lean transformation. Value stream includes all processes right from sources of raw materials, production, logistics and delivery; the entire supply chain has to be seen as a whole. Current state is mapped using the powerful technique of "Value Stream Mapping". The objective of VSM is to discover the constraints in material supply, equipment, processes, operations, people competence, logistics, supporting services etc. which are causing generation of various types of waste.
- **Set the targets:** the next step is to decide lean metrics/process performance parameters and set the targets for next twelve months. This is done through developing a "future state value stream map", identification of improvement projects and making a "value stream Improvement plan". Form cross functional project teams to work on improvement projects.
- **Develop Lean Facilitators:** one of the major reasons for failure of lean implementation across the globe is lack of competent facilitators. This is job of Lean Consultant to train a group of dedicated Lean facilitators (internal consultants) as "problem solvers" to drive the improvement projects. A well-structured skill building training is provided to cover lean concepts, tools and implementation methodology.



- **Make improvements:** improvements are made project by project to accomplish targets, by trained and qualified project team leaders. Lean Consultant periodically monitors project progress, provides training of appropriate tools, and guides the team members.
- **Standardization:** after successful completion of the project, operations are standardized to hold the gains.
- **Develop a Lean Management System:** the next step is to expand lean transformation in all other value streams including non-manufacturing, logistics and service processes.

Results of Lean Manufacturing

During the lean implementation imperfection in value stream, which are causing defects, delays, inefficiency, and other wastes are eliminated by making appropriate improvements in process steps, machines, materials, operations, systems and people's competence. In the perfect value stream, products are produced reliably, efficiently, with good quality, and in sufficient quantity at the individual process level and throughout the entire value stream, which can be seen in following forms:

- Reduced order to delivery lead-time
- Improved quality
- Reduced cost
- Reduced inventory
- Improved workplace condition
- Improved process capability
- Improved equipment availability
- Improved people's involvement
- Improved profitability

Return on Investment?

Based on the experiences of several companies, the returns from lean implementation will be several times more than investments made on consulting intervention. In addition to improvements in products, processes, equipment condition, workplace, profitability etc. there will be a great transformation in people and culture of the organization. It is a "no-risk" proposition.

How to begin the lean Journey?

The next step for the company is creating awareness of "Lean" among all employees. It is essential that people must "buy-in" and "pull" the concept and develop commitment to make it happen. This is triggered through a two-day's in-house "Lean Appreciation workshop and Lean Audit" program. During this program "Lean Expert" provides comprehensive understanding of concept to the process-owners and makes a preliminary assessment of the opportunities for improvement.

A Brief on Workshop on Ferro Alloys

The Indian Institute of Metals-Delhi Chapter organized a Ferro Alloys Workshop on 1st May 2012 at their Chapter premises.

The following two presentations were made in the Workshop.

1	Indian Ferro Alloy Industry - Present Status and Future Outlook	Mr. C N Harman Director (Technical) Facor Alloys Ltd

2	Manganese Ore, Chrome Ore, Ferro Alloys	Mr. G P Kundargi Director (Production & Planning) Manganese Ore India Ltd

Forty five representatives participated in the deliberations of the Workshop. They included representatives from: Tata Steel, M N Dastur & Co, Mecon, SAIL, Jindal Steel, Steel Furnaces Association of India, ECI, MOIL, Ministry of Steel and representatives from various Ferro Alloys Manufacturing Units.

The participants to the Workshop were welcomed by Shri S C Suri, Vice Chairman, IIM DC. Shri Suri briefed the participants about the various activities of IIM and the activities of IIM DC. Shri Suri also highlighted the theme and importance of the Ferro Alloys Workshop. An introduction to the Workshop was given by Shri K L Mehrotra, Vice Chairman, IIM DC. Shri G I S Chauhan, Hon. Joint Secretary IIM DC introduced the two speakers who made the presentations.

The presentation by Mr. Harman covered in detail an overview and perspective on Ferro Alloys Technology.

The presentation specifically included the following areas:

(a) Industry's profile and expansion of the bulk Ferro Alloys industry
(b) Current status of the industry with production level and extent of imports and exports of different Ferro Alloys,
(c) Availability of quality inputs
(d) Review of the technology adopted for production of different ferro alloys
(e) Challenges and opportunities in the Ferro Alloy sector.

A special emphasis was made by Mr. Harman about the power and logistic constraints faced by the Ferro Alloy Industry. Mr. Harman also stated that Ferro Alloy Industry is facing problems due to high prices of manganese and chrome ore, coal, coke and high energy tariff. There was a detailed question-answer session after the presentation by Mr. Harman.

In his presentation on Raw Material Resource base for manganese ore, chrome ore, ferro alloys Shri G P Kundargi, Director (Production & Planning), MOIL reviewed the following aspects.

(a) India's present and projected steel demand
(b) The raw material scenario for:
  (i) Iron Ore
  (ii) Coking coal
  (iii) Manganese Ore
  (iv) Production details of Ferro manganese, Ferro Silicon, Ferro Chrome
(c) Import and export of major ferro alloys
(d) Projected demand of different raw materials and demand for ferro manganese, silico manganese, ferro silicon, ferro chrome in the 12th Five Year Plan

Shri Kundargi's presentation made specific recommendations in the following areas:

(1) Increased focus and attention to ensure high rate of recovery of manganese from the ore by beneficiation and sintering process

(2) Need for undertaking extensive surveys by Geological Survey of India in order to identify new ore deposits for production of different ferro alloys

Full text of the two presentations were made available to the workshop participants. There were lively interactive comments made by the participants. A special mention may be made of the comments/observations made by Dr. G Mukherjee, former Vice Chairman, SAIL, Shri A C R Das, Industrial Advisor, Ministry of Steel, Shri B D Jethra, Member EC, IIM DC, Shri P N Shali, Director, ECI, Shri K L Mehrotra, Vice Chairman IIM DC, Shri Anil Gupta, Chairman, IIM DC and several other participants.

Mementoes were presented to Mr. Harman, Mr. Kundargi and Dr. G Mukherjee by Shri Anil Gupta, Chairman IIM DC. Vote of thanks was proposed by Shri V C Singhal, Secretary IIM DC.

The Workshop ended with a lunch hosted by IIM DC for the participants. Details of the Workshop are available at our website.

A Brief on Seminar on Nano Technology

The IIM-DC organised a Seminar on Nano Technology on 5th May 2012 in its auditorium.

The Seminar was attended by about 60 persons. The audience included students pursuing Nano Technology stream, officers from Ministry of Steel, SAIL, MECON, CET, Joint Plant Committee and few other organisations.

Mr. Anil Gupta Chairman IIM-DC welcomed the participants. He gave a brief presentation about the activities of IIM-DC.

Mr. P K Chatterjee Member EC, while briefly introducing Nano Technology mentioned that Nano Technology combines Engineering, Physics, Chemistry and Biology and has a tremendous potential to revolutionise a concept of key Science & Technological areas.

This technology basically involves manipulation of atoms molecules & materials to form structures on the Nano Scale (billionth of a metre). These new structures physically exhibit new properties or behaviour due to quantum mechanics.

Five eminent scientists from different institutes/organisations gave presentations as under:

1. Dr. R P Singh, Director, Amity Institute of Nano Technology gave a key-Note address in the Seminar and spoke on "Indian Status of Nano Technology & its Future Perspectives.
2. Dr. P K Chaudhury, Scientist G & Head Nano Technology Division of Solid State

Physics of Ministry of Defence, R & D Organisation spoke on "Carbon Nano based Tube Devices.

3. Dr. A K Srivastava, Principal Scientist of National Physical Laboratory, gave a presentation on "Materials Characterisation at Nano Scale: Importance & Implication".
4. Dr. R. Bhattacharyya, Visiting Faculty of Delhi Technological University, spoke on "Metal Nano Particles and the Promise of Plasmanics".
5. Dr. O P Sinha of Amity Institute of Nano Technology addressed the gathering on "Role of Nano Technology on Solid State Lighting.

Shri P K Chatterjee summarised the presentations & observed:

1. The wide area of applicability of Nano Technology has several examples such as computer chips, harder cutting tools, transmission cables, various defence needs and lighting etc.
2. The unique role of electron microscope as a tool for Nano Material Characterisation has wide applications.
3. Nano Technology has led to re-thinking on the approach to optics and about new research efforts called plasmanics.
4. The role of semi-conductors of metal oxides Nano structures in organics light emitting diodes (OLED).

Shri P K Chatterjee proposed a vote of Thanks.

As a token of appreciation Mementos were presented by IIM DC to the distinguished speakers.

The seminar ended with a lunch. The details of the Seminar are available at our website.

Visit to HML Lalru, Mohali (07April 2012) – A Brief Review

The Indian Institute of Metals – Delhi Chapter regularly organizes visits to eminent industries in and around NCR, for benefit of its members. In this series, a team of IIM DC members visited Hansa Metallics Ltd., Lalru, Mohali on 07April 2012, on initiative of IIM-DC members. The visiting members went around modern facilities of HML and had extensive deliberations with the senior officials. Mr.S.L.Saini, General Manager of the Plant, personally took around Team members and explained working of different Units. Hansa Metallics Ltd., Lalru is a Family owned, modern Tube making facility. The Company was incorporated in 1997 and the plant was set up at the present location, with Headquarters in Industrial

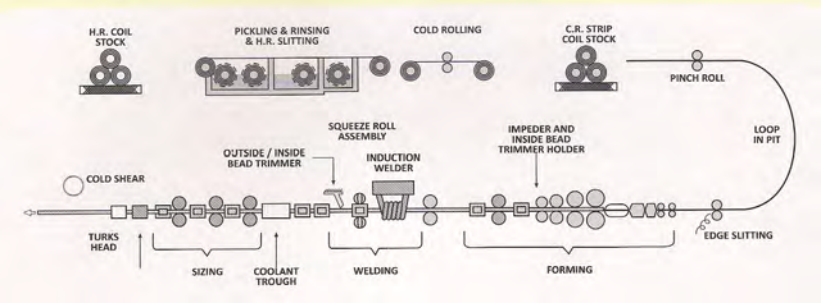
Area I, Chandigarh. The plant has in-house facilities for Cold Rolled steel strips & foils and High frequency ERW Precision Tubes. Mr. Surinder Garg CMD, is the head of Organization.

PLANT FACILITIES

Process

Hot Rolled (HR Coils) are received, by road from Integrated Steel Plant. Coils are sent through' Pickling & Rinsing Line and Cold Rolling for cleaner finish and achieving precise thickness for further processing. Cold Rolled strips are then sent through' annealing under inert atmosphere. The Bright Annealing Furnace has been supplied by Technotherma India Pvt. Ltd. Annealing temperatures varies between 640 -710°C depending upon the carbon content of the coil. Annealed strips are then sent to slitting unit to achieve exact width for final processing. Slits are then finally processed in the Tube making Unit by forming, induction welding and sizing stages. Tubes are then cut by a cold shear and are bundled for dispatch to consuming industries.

A broad process flow is given below:



Cold Rolling & ERW Tube Manufacturing Process

Facilities

- ✓ Continuous pickling line for HR Coils
- ✓ 6 high Cold Rolling Mill 1000 mm width with Automatic Gauge Control Device
- ✓ Separate slitting line of HR/CR Coils
- ✓ Bright Annealing Furnaces
- ✓ 5-Tubes Mills to produce from 12 mm to 110.5 mm diameter facility, equipped with Cold Saw
- ✓ D.M. water plant for quality product
- ✓ Physical laboratory for Mechanical Properties and dimensional measurements

Products

- ✓ Electrical Resistant Welded Plain Carbon steel tubes – OD 12.7 to 114.5mm, thickness 0.71 to 4.5 mm, up to 8 meter long - Cycle, automotive, furniture and general engineering applications
- ✓ Electrical Resistant Welded Square Hollow Sections – Size 19 to 50mm, thickness 0.71 to 4.5 mm, up to 8 meter long - Automotive, furniture and general engineering applications
- ✓ Electrical Resistant Welded Rectangular Hollow Sections – Size 40x20 to 80x40mm, thickness 0.71 to 4.5 mm, up to 8 meter long - Automotive, furniture and general engineering applications
- ✓ Electrical Resistant Welded Oval & Elliptical Hollow Sections – Size 20x60 to 57x27mm (oval) and 29x61 to 32x52 mm (elliptical), thickness 0.71 to 4.5 mm, up to 8 meter long - Cycle, automotive, furniture and general engineering applications

INTERACTIONS WITH SENIOR OFFICIALS

Activities of IIM Delhi Chapter were discussed. Copies of IIM-DC Monthly Newsletter, IIM-DC Brochure and MMMM2012 Conference Brochure were handed over. Senior officials of HML were invited to participate in MMMM2012 Conference and Exhibition. The visit to Hansa Metallics Ltd. Lalru ended with thanks to their senior officials for facilitating this visit.

Facts about the Great Gujarat

The State of Gujarat is situated in western India and bordering Pakistan, Gujarat is among India's most prosperous states. Some of the interesting facts about the State are:

1. It's per capita GDP is 2.4 times the Indian average. Gujarat's GDP growth rate is 10.6% and India cannot achieve 8%.
2. If it was a nation it would have been 67th richest nation in the world above many European and Asian economies like Taiwan and Ukraine. Gujarat holds many records in India for economic development:
   - 20% of India's industrial output.
   - 80% of India's diamond production.
   - 9% of India's mineral production.
   - 50% of India's natural gas production.
   - 54% of India's crude oil production.
   - 22% of India's exports.
   - 24% of India's textile production.
   - 45% of India's pharmaceutical products.
   - 35% of India's sponge iron production.
   - 47% of India's petrochemical production.
3. The world's largest ship breaking yard is in Gujarat near Bhavnagar at Alang. Reliance Petroleum Limited, one of the group companies of Reliance Industries Limited founded by Dhirubhai Ambani operates the oil refinery at Jamnagar which is the world's largest grass roots refineries.
4. Gujarat ranks first nationwide in gas-based thermal electricity generation with national market share of over 8% and second nationwide in nuclear electricity generation with national market share of over 1%.
5. Over 20% of the S&P CNX 500 conglomerates have corporate offices in Gujarat Over 35% of the stock market wealth of India is with Gujarati People.
6. In recent Forbes magazine list of 10 richest Indian people, four are Guajarati – Mukesh Ambani, Anil Ambani, Azim Premji and Tulsi Tanti. Over 60% of Indian population in North America is Gujarati.
7. An average income of a Gujarati family in North America is three times more than the average income of an American family.
8. Gujarat is having the longest sea shore compared with any other Indian state. Gujarat is having the highest no. of operating airports in India (Total 12). India's 16% of investment are from Gujarat.
9. Indian Institute of Management, Ahmedabad (IIMA) is Asia's 1st and world's 45th ranked management college located in Ahmedabad, Gujarat.
10. Gujarat is the safest state as the Crime rate of it is 8.2 which is the least in India.
11. Gujarat is having least crime against women among all Indian states where AP is 1st, Delhi is 2nd, Bihar is 3rd, Jharkhand is 4th and UP is 5th. Ahmedabad which is the seventh largest city in India is the lowest in crime rate among all Tier-I and Tier-II cities of India as per National Crime Records Bureau (NCRB) report.
12. Ahmedabad is ranked 2nd in Real Estate – Ahead of Bangalore, Chennai, Hyderabad, Mumbai and Delhi.
13. Ahmedabad is ranked 3rd in Policy Initiatives – Ahead of Bangalore, Chennai, Calcutta, Mumbai and Delhi.
14. Ahmedabad is ranked 4th in Manpower – Ahead of Bangalore, Chennai, Mumbai and Delhi. Percent of man-days lost in Gujarat owing to labor strike are lowest in country – just 0.52%
15. It is the first state to implement the BOT law for encouraging private sector participation.
16. It is the first state to have fully functional LNG terminal
17. Gujarat has 33approved SEZS

18. Gujarat is the first state to interconnect 20 rivers
19. It is the first state to provide uninterrupted 24hr 2 phase electricity to all villages
20. It is currently implementing state-wide water distribution grid that will connect all 14,000 villages and all cities
21. It is the only state with state-wide gas grid
22. It has largest e-governance network in Asia Pacific
23. Its agricultural production has been increased fourfold in five years (from USD 2 billion in 2001-2002 to 7.5 billion in 2005-2006)
24. Operation 'white Flood' (Milk) was initiated in Gujarat by Dr. Kurien which took India in 1998 to become highest milk producer in the world.
25. Consumption of Gold in Gujarat is highest in India.
26. Largest number of immigration and emigration is done from Gujarat. Also highest numbers of passports are issued from Gujarat.
27. Baroda gas project – bringing natural gas to every home – More than 35 years ago they installed pipelines to bring natural gas to every kitchen.
28. AMUL – NDDB another achievement for Gujarat – it was just fantastic to see how they collected milk early morning from every village in Gujarat. The villagers would line up at 3 in the morning at the milk collection centers!
29. According to a recent study by the Reserve Bank of India, the country's central bank, Gujarat stood first in the country with investments of US$ 17.8 billion in 2006-07 or 25.8% of India's total investment of US$ 69 billion during the year. The southern state of Andhra Pradesh stood a distant second having attracted US$ 6.1 billion in 2006-07.
30. Gujarat moved up from second place in 2005-06 having tripled its investments in a year. A report in Times of India describes the Gulf of Kutch as India's 'Gulf of Riches'. Four top business houses – Reliance Industries, Essar Group, Adani Group and Tata Group, have invested about US$ 34 billion along the Gulf of Kutch's 700-kilometer long coastline. Other corporate, which had invested over US$ 3.26 billion since the 2001 earthquake have investments worth another US$ 19.5 billion in the pipeline.
31. Ten special economic zones (SEZs) near Jamnagar, a 4000-megawatt power project and five private shipyards are coming up. And massive expansion is being undertaken of the Mundra and Kandla ports.
32. Gujarat's 41 ports handle 80% of India's port traffic and 20% of its cargo. It is estimated that by 2015, Gujarat's ports will handle 39% of India's cargo.
33. Not only has Gujarat unseated Maharashtra as India's number one investment destination but also, it is threatening to dislodge Mumbai, Maharashtra's capital and the financial and business capital of India, as the trade gateway to the country.
34. Mundra port where Indian Oil Corporation and Hindustan Petroleum are setting up giant oil storage capacities has already emerged as India's largest private oil storage tank farm. 60% of India's coal imports enter via Mundra port. Mundra's importance is likely to soar further with the completion of mega power plants being set up by Adanis and Tatas.
35. The volume of cargo handled by Mundra and Kandla ports alone has outstripped that handled by Mumbai's ports – the Mumbai Port Trust and the Jawaharlal Nehru Port Trust. And now Gujarat is nursing ambitions of dislodging Mumbai as India's financial hub. Its government recently announced the setting up of an international financial services center, the Gujarat International Finance Tech-City with an investment outlay of US$ 6 billion in Ahmedabad.
36. Forbes Magazine published list of Top 20 Self-Made Business-Men from Asia The list includes 6 men from India and out of 6 three are Gujarat - Tulsi Tanti, Gautam Adani and Uday Kotak.

Source: Steel Tech

Facts about China:

China has 19% of the world's population, but consumes

- 53% of the world's cement,

- 48% of the world's iron ore,
- 47% of the world's coal.
- And the majority of just about every major commodity.
- In 2010, China produced 11times more steel than the United States.
- New World Record: China made and sold 18 million vehicles in 2010.
- China currently has the world's fastest train and the world's largest high-speed rail network.
- China is currently the number one producer in the world of wind and solar power.
- China currently controls more than 90% of the total global supply of rare earth elements.
- In the past 15 years, China has moved from 14th place to 2nd place in the world's in published scientific research articles.
- China now possesses the fastest supercomputer on the globe.
- At the end of this year, China accumulated US$ 3.04 trillion in foreign currency reserves – the largest stockpile on the entire globe.
- Chinese consume 50,000 cigarettes every second – Not an enviable record though.

Source: Steel Tech

CIL to go slow on underground mines

The world's largest coal producer Coal India Ltd. (CIL) will go slow on underground (UG) mines as there is a drop of about 1 million tonne in production from these mines every year.

Out of the total 467 mines the company has 273 underground mines, 164 open cast mines and 30 mixed mines.

"Though we have 273 UG mines, during the last financial year, those mines contributed only 38.39 million tonne out of our total production of 435.84 million tonne, which is below nine per cent," said a top company official.

When asked about its strategy on UG mines, the new chairman and managing director S Narsing Rao said, "Underground mines have a negative growth trajectory. Every year, there is a decline in production by about one million tonne in a secular basis. I don't know whether we can arrest this decline. If we have to go for mass production strategy depending on demand, then open cast mines should be the option."

CIL had invited expression of interest from global mining giants for the first time in 2008 for 18 abandoned mines owned by three subsidiaries – Eastern Coalfields, Bharat Coking Coal and Central Coalfields. After a pre-notice inviting tender (NIT) meeting with the short-listed parties, the government had approved model NIT document. However, in the first round of limited tendering none of the shortlisted players responded. Those who were shortlisted during the first round, included ArcelorMittal, Rio Tinto, Reliance Natural Resources, JSW Steel and Essar Steel.

Earlier this year, Bharat Coking Coal was reportedly going to open seven new underground mines in Jharkhand, including Putki Balihari, Kapuria, Madhuban, Moonidih (15 seams and 16 seams), Amlabad and Sumandi in Dhanbad area. In 2010-11, its contribution from UG mines was a mere 4 million tonne.

"Reopening of those mines were mostly planned in Bharat Coking Coal. Though from a technology point of view UG mines should be maintained, the quantity they offer is just one or two million tonne. None of those mines have a capacity of more than two million tonne, which would not add hugely to our production target," Rao said.

In 2011-12, the company produced only 435.84 MT showing a one per cent rise from the 431.32 MT in 2010-11. However, it has set a target of about 464.1 MT for the current financial year. Rao expressed hope that the firm will be able to meet the target. But the major constraints for the company would be the new fuel supply agreements. If they sign the agreements with power companies, CIL said that at least 70 projects need environment clearances that have a capacity of about 196 MT.

Source: Business Standard

Sponge iron units in consolidation mode

With the availability of iron ore remaining low, the Rs. 65,000-crore sponge iron industry is moving towards consolidation. Sponge iron, also called Direct Reduced Iron (DRI), is used in the manufacture of Steel. India is the world's largest producer, accounting for 43 per cent of global production. The problem in the supply of iron ore is a sequel to the central government's pressure to stop illegal mining in Karnataka, Odisha and Goa. Large companies with assured supply of ore, the raw material, either through captive mining leases or long-term contracts with mining companies, are scouting for acquisition opportunities of small and mid-size sponge iron units. Established companies have already started acquiring smaller ones with definite linkages to raw material blocks.

Data compiled by the Sponge Iron Manufacture Association, the apex trade body, showed the industry has 350 units with installed annual production capacity of 34.9 million tonnes. During 2010-11, capacity utilisation was 64-67 per cent. Of that, nearly 70fairly large-scale units, comprising around 75 per cent of the overall capacity, are looking for acquisition opportunities.

"Raw material security has become a major concern for the domestic sponge iron industry. Be it coal or iron ore, the sponge iron units with raw material backing are high on demand and a preferred target for acquiring companies in this sector," said Amitabh Mudgal, senior vice president, Monnet Ispat & Energy Ltd. one of the largest producers.

DRI is produced using either coal or natural gas. Since non-coking coal is easily available in India, the sector depends largely on coal-based sponge iron. The raw materials for sponge iron are non-coking coal, iron ore and dolomite, fed into a kiln. The coal burns at a very high temperature and the carbon in the coal reduces the iron ore into metallic iron. The mixture is cooled by spraying water and the iron is segregated using a magnetic separator. This reduced iron can then be converted into steel in a furnace.

Every tonne of DRI uses about 1.7 tonnes of iron ore, 1.5 tonnes coal, 0.05 tonnes dolomite and two tonnes water. The production of a tonne of DRI, in turn, generates about two tonnes of carbon dioxide, 0.25 tonnes dust, 0.3 tonnes coal char and 0.02 tonnes sulphur dioxide and water vapour. The gas emissions from the kilns impact air quality. The solid waste, comprising char, lime, iron dust and ash is dumped in the open.

Concerns over the pollution sponge iron factories cause seem to have taken a back seat, as increase in demand for steel and scarcity of coking coal (needed for blast furnaces to make steel) drives production. The sector has grown by leaps and bounds since 2002. Its capacity increased 267 per cent between 2003 and 2009, from 10 Mt to 36.7 Mt. The new factories are almost entirely coal-based. The growth in production, however, has not been commensurate with the increased capacity. From 12.53 Mt in 2004-05, production increased to 20 Mt in 2008-09.

Meanwhile, three major states with clusters of sponge iron units – Andhra Pradesh, Punjab an Chhattisgarh – have raised power supply rates by Rs. 0.80 per unit, resulting in steel making becoming costlier by Rs. 1,000 a tonne. A four-five per cent rise in iron ore prices by NMDC Ltd has also raised the cost of steel production by Rs. 500 a tonne. And, the price of sponge iron has declined by five per cent in the past month, to Rs. 23,000-23,500 a tonne, thereby creating a margin pressure on producing companies, said an analyst.

Source: Business Standard

World's largest iron ore producers, 2011

Company	Base	Capacity Mt/yr.
Vale Group	Brazil	417.1
Rio Tinto Group	UK	273.7
BHP Billiton Group	Australia	188.5
ArcelorMittal Group	UK	78.9
Fortescue Metals Group	Australia	55.0
Evrazholding Group	Russia	50.4

Metalloinvest Group	Russia	44.7
AnBen Group	China	44.7
Metinvest Holding Group	Ukraine	42.8
Anglo American Group	South Africa	41.1
LKAB Group	Sweden	38.5
CVG Group	Venezuela	37.9
Cliffs Natural Resources	USA	34.6
NMDC Group	India	32.6
Imidro Group	Iran	29.8
CSN Group	Brazil	28.0

Source: Steel Tech

Fall in India's Iron Ore Exports

Iron ore exports from India in the first nine months of the year from April 2011 slumped 30.4% to 46 Mt from the year ago period and could be 65 Mt to 70 Mt in the full year. Last year India's exports ranked it behind Australia and Brazil but now sales may fall below South Africa and come close to Canada. India is expected to produce 150 Mt to 160 Mt of iron ore in 2011-12, sharply down from the previous year's 208 Mt, according to industry estimates. India's iron ore export shipments may plunge by as much as 57% in 2012-13 knocking India off its position as the world's third largest supplier and boosting global prices. Mr. N K Nanda, CMD of NMDC told that exports of the steelmaking raw material might drop to as low as 30 Mt in 2012-13, falling for a third straight year. He said that "Exports will be 30 Mt to 40 Mt in 2012-13 after meeting 100 Mt to 120 Mt of local demand."

Source: Steel Tech

SAIL to set-up Rs. 1,600 crore New Universal Rail Mill at Bhilai

SAIL is investing Rs. 1,600 crores in a new state-of-the-art Universal Rail mill of 1.2 million tonne capacity at Bhilai. The mill, which is likely to be operational by next year, shall produce single 130-metre rails, with a provision for welding them up to 520-metre lengths. Moreover, the mill has been designed to produce heavier rail sections up to 75 kg/m and head-hardened rails for the first time in India. SAIL is already the sole supplier of rails to the Indian Railways, including long rails of 260 metres. It may be mentioned that SAIL has signed a pact with RITES to set up a wagon manufacturing unit at Kulti in West Bengal to manufacture 1,200 wagons annually and undertake rehabilitation of 300 wagons.

Source: Steel Tech

Tata Steel Announces Production Results for FY' 2011-12.

Tata Steel completed FY'12 with an overall increase in production and sales. The year registered its best ever performance in hot metal, crude steel, saleable steel production and total sales. Tata Steel production for financial year 2011-12

'000 tonnes

Items	Q4			April – March		
	FY'11	FY'12	%Change	FY'11	FY'12	%Change
Hot Metal	1933	1959	1.3	7503	7750	3.3
Crude Steel	1778	1824	2.6	6855	7126	3.9
Saleable Steel	1738	1777	2.2	6691	6970	4.2
Sales	1712	1768	3.3	6416	6632	3.4

Source: Steel Tech

RASHTRIYA ISPAT NIGAM LIMITED (RINL) PERFORMANCE FOR 2011-12

Visakhapatnam Steel Plant (RINL) Achieved Record Sales Turnover. Visakhapatnam Steel Plant (RINL) clocked sales of Rs. 14,457 crores in 2011-12, a growth of 26% over the last fiscal. Mr. AP Choudhary CMD of RINL said that this was the highest ever turnover registered by the state run steel producer. He said the turnover target for the current financial year has been set at Rs. 20,000 crores. The CMD said several new products from VSP's units will be launched this year. An additional production capacity of 1.5 Mt will be added to the present 3 Mt capacity under an expansion scheme. Mr. T K Chand Director, Commercial said that despite an increase in prices of input materials like iron ore and coke,

the plant has maintained its quality and achieved a record turnover last fiscal. Mr. Chand said that steel industry has a bright future as the Union Government has announced to create infrastructure worth INR 50 lakh crores in the 12th Five Year Plan (2012-17).

Source: Steel Tech

Jindal Steel Power Ltd Set to Buy a Majority Stake in Gopalpur Port

Jindal Steel and Power Ltd (JSPL) is set to buy a majority 60% stake in Gopalpur Ports Ltd. as it looks for a maritime gateway to ship the raw materials required for its steel and power plant coming up in India's eastern state. The move will mark JSPL's entry into the ports sector. Gopalpur port is being developed with an investment of over Rs. 2,000 crores in three phases with a capacity to load 40 Mt of cargo a year. JSPL will buy the stake from Sara International Ltd and Orissa Stevedores Ltd, the original promoters of Gopalpur Ports. The equal Joint Venture between Sara International and Odisha Stevedores had been awarded the port project by the Odisha Government in September 2006 for development and operations for an initial period of 30 year and extendable by another 20 years. "The deal is on," said D. P. Singh, Managing Director of Sara International, a Noida-based firm with interests in trading minerals, steel, agricultural produce and textiles. Singh is also the Chairman of Gopalpur Ports. "We have signed a memorandum of understanding with JSPL to sell our 50% stake in Gopalpur Ports. The share purchase agreement has not been signed as yet. This will happen by end of February or early March," JSPL will also buy another 10% stake from Orissa Stevedores, Singh added. After the deal, Gopalpur Ports will be 60% owned by JSPL and 40% by Orissa Stevedores.

The first phase of the port, built at a cost of Rs. 1,250 crores with a capacity to load 10 Mt of cargo, will start operations in March 2013. Gopalpur Ports has tied up a Rs. 848.78 crores loan from a consortium of 11 banks, led by Punjab National Bank, to build the port. "The port project has secured all the required permissions, including the key environment clearance for take-off," Singh said. "We have taken possession of about 700 acres of land and are looking for more." For JSPL, the acquisition provides synergy. The firm with interests in steel, mining, power and infrastructure, plans to invest Rs. 50,000 crore to set up a 12.5 Mt integrated steel plant and a 2,600 MW captive power plant in Odisha in phases. JSPL is also investing close to Rs. 45,000 crores in the State to produce an estimated 80,000 barrels per day, or 4 Mt per year, of crude oil using environment-friendly indirect coal liquefaction technology. "All these will require huge inward and outward movement of cargo, which can be facilitated through the port. JSPL's in-house cargo will also provide assured traffic to Gopalpur," Singh said.

Source: Steel Tech

World Stainless Steel Production Uptrend in the year 2011

Preliminary figures released by the International Stainless Steel Forum (ISSF) indicates that stainless steel production grew by 3.3% in 2011. Total production was 32.1 million metric tonnes (Mt), a new record for a single year. Although there was some destocking noted during the third quarter of 2011, this was partially compensated during the final three months of the year. The increase in 2011 production comes on top of a 25% increase in 2010 which followed the economic crisis of 2008/2009. The recovery of the industry proves that a century after its discovery and commercialisation, stainless steel still has enormous potential for growth. Not all of the stainless producing regions of the world have developed at the same pace in 2011. Excluding China, production in the Asia region declined by 2.7% to 8.8 Mt during 2011. In Taiwan China production declined by 20.6%. Production in Japan declines by 5.3% to 3.2 Mt. By comparison, Korea (+5.3%) and India (+7.0%) increased their production of stainless during the year.

China has remained the driving force in stainless steel production with growth of 11.9% in 2011. The country produced 12.6 Mt of stainless during the year. Including China, Asian production now accounts for 66.5% of all the stainless steel produced in the world. Stainless steel production in the Western Europe/Africa region largely stagnated during 2011 with volume of just under 7.9 Mt. Growth rates of individual countries in the region ranged from -5% to +18%. In the Central and Eastern Europe region, production rose by 14.1% to 0.4% Mt, although volume is almost negligible in a global context. In the Americas, stainless production rose to 2.5 Mt, an increase of 4.7% compared to 2010.

Stainless crude steel production (in '000 metric tons)						
Region	**Full Year**		**Y-o-Y**	**Full Year**		**Y-o-Y**
	2009	**2010**	**+/-%**	**2010**	**2011**	**+/-%**
Western Europe/Africa	6,449	7,878	22.2	7,878	7,875	0.0
Central and Eastern Europe	237	340	43.6	340	387	14.1
The Americas	1,942	2,609	34.4	2,609	2,486	-4.7
Asia (excluding China)	7,472	9,011	20.6	9,011	8,770	-2.7
China	8,805	11,256	27.8	11,256	12,592	12.9
World total	**24,904**	**31,094**	**24.9**	**31,094**	**32,110**	**3.3**

Over the past few years, the stainless steel market has seen major changes in the grades of stainless produced. Chromium-manganese grades have become increasingly important in this time. More recently, production of chromium grades has also increased. Table 3 shows the market share of the three main categories of stainless steel. The data is based on reports from ISSF's stainless steel producing members.

Stainless steel production by grade (per cent of stainless steel production – preliminary estimates)					
Grade Category	Quarter 1	Quarter 2	Quarter 3	Quarter 4	2011 (p)
Chromium – manganese steels (200 series)	13.4	13.6	13.7	14.4	13.8
Chromium – nickel steels (300 series)	59.5	57.3	58.4	7.6	58.2
Chromium steels (400 series)	27.1	29.1	28.0	28.0	28.0

Source: Source: Steel Tech

JSPL to buy 2 steel plants in Europe - Report

Indian Express reported that Jindal Steel and Power is gearing up to expand its presence in Europe through the inorganic route. As per report, JSPL is in negotiations for acquiring two steel plants in Western Europe that will give a major boost to its production capacity.

Mr VR Sharma deputy MD and CEO steel business of Jindal Steel & Power Limited told express that "We are likely to make an announcement (on the acquisition of two plants) in the next one month. The deals have come to us through the government." He said that the plants are located at different locations with a capacity of over 3 million tonnes per year each.

In 2007, JSPL had secured the development rights for 20 billion tonnes of iron ore of El Mutun mines in Bolivia for 40 year.

Through its 100% subsidiary Jindal Steel & Power (Mauritius) Ltd (JSPLM), JSPL had acquired Oman-based Shadeed Iron & Steel Co. LLC in 2010. Jindal Shadeed has already installed a 1.5 million tonne gas based hot briquetted iron plant with an investment of USD 500 million and will be setting up a steel plant and rolling mills in Oman in the next two years.

Source: Steel Guru

Auto sales in India

	Sales in 2010-11	**Growth, %**	**Sales in 2011-12**	**Growth forecast, %**	**Growth, %**
Passenger Vehicles	2,519,000	29.0	2,6118,072	4.66	10-12
Two Wheelers	11,790,000	25.8	13,435,769	14.16	11-13
Commercial Vehicles	676,000	27.0	809,532	18.2	9-11
Three Wheelers	526,000	19.5	513,251	-2.43	5-7
Overall industry	15,513,156	26.17	17,376,624	12.24	10-12

Source: Steel Tech