DIAGNOSTIC STUDY OF
FOUNDRY CLUSTER OF BELGAUM

Introduction ✈

The Indian Metal Casting Industry is as old as Indian Civilization and its primordial manifestations were found in religious statues of god like Natraja and other figures. The roof of modern casting Industry was laid out in the year 1850 AD and grow with the growth of engineering sector.

Global Presence ✈

There are about 35000 Foundries in the world with annual production of 69 million metric tones (as per 36th census of world casting production 2001) Providing employment to mote than 20 lakh people. In terms of number of operating foundries. China tops the list (12000) followed by India (7000) and USA (2700). China and USA tops in casting production in the world. Iron foundries share maximum number (56.21%) followed by non-ferrous (29.48%), steel foundries (14.31%),. The world wide export market potential was estimated to be about USD 30 billion.

The growing environmental concerns and globalization of economies in Europe led to the closure of a good number of Foundries and these countries are contemplating to shift their business to low labour cost countries. World Foundry market is becoming competitive as such France, USA and Spain have established new companies in China and Mexico. Other European countries have improved the productivity to annual labor cost gap aimed investments, exploiting knowledge and technical capacity to enlarge the market. Creating international agreements to be able to use better know-how combined with low labour costs, typical of developing countries.

Indian Scenario

The impetus of Foundry Sector in India was given by Jute Industry in Bengal and Cotton Industry in Mumbai in late 19th century. The establishment of TISCO, Bengal Iron Company and IISCO was led to a remarkable use of castings in both domestic and Industrial Area.

It is estimated around 7000 Foundries are operating all over India with a total casting output of approximately 3 million tones consisting of 2.36 million tones of Iron casting 4,00,000 tonnes of steel castings 2,68,000 tonnes of malleable and SG Iron castings and 20,000 tonnes of Non ferrous castings. The annual production is worth of Rs. 10,000 crores. India is one of leading producer of castings in the world. The Foundry units in India are mostly located in clusters, notable among them are Howrah, Rajkot, Agra, Jamnagar, Belgaum, Kolhapur, Coimabatur and Hyderabad. A number of units ranges from 100 to 700 at different foundry cluster. The foundry produce a wide variety of castings used in

Automobile Industry, Flour Mill Parts & Components, Electric Motor, Manhole Covers, Oil engine, Pump sets, Sanitary items, Pipe and Pipe fittings, Sugar Machinery etc.

The production of different castings is as follows -

Grey Iron	➧	72%
Steel Castings	➧	10%
SG Iron	➧	10%
Aluminum	➧	8%

The industry has witnessed a average growth in last 10years. The export of castings from India worth 131.35 million UDS and sanitary castings worth 55.39 lakhs USD in 1999-2000. These exports are mainly to USA and European Countries.

Spatial Distribution of Foundries ✈

Foundry units in India are mainly conserated in states of West Bengal, Gujarat, Maharashtra, Tamilnadu, Karnataka, Andra Pradesh and Jarkhand. Concentration of foundries is correlated to the spread of Engineering and Automobile Industries.

Belgaum Cluster

According to a survey conducted and as per registration of Foundry members with IIF Belgaum chapter, there are about 110 Foundries in and around Belgaum city. Majority of Foundries are located in Udyam bagh, Mac Industrial Area and Angol Industrial Estate. The total output of C.I castings is estimated to be 60,000 tonnes and value approximately Rs. 120 crores for the year 2001-2002. The industry caters to wide range of customers mainly for Automobile industries, Diesel oil engines, Machine tools, tractors, Pumps and Valves, Pipes fittings, electric Motors, Flour mill and Food processing machinery, drainage equipments like manhole covers etc.

Apart from domestic sales SI Foundry unit, of Belgaum Export castings, for the year 2001-02 the export of castings was around Rs. 6 crores. M/s. Ashok Iron Works which is medium scale foundry plant has turn over of Rs. 100 crores and exports worth of Rs. 11.00 crores for the year 2001-2002.

History of the Cluster

The history of Foundry Industry of Belgaum goes back 1940 when late Shri. Angolkar and Ambewadikar of Belgaum started their first cupola for the manufacture of agricultural implements. In the year 1950 and onwards the foundry units of Belgaum started manufacturing castings for machine tools, flour mills parts and components. Castings for Kirloskar Group of Companies for machine tools, oil engines, electricity machinery and pump sets.

In the year 1960's there was a boom for 5/10 H.P Diesel oil engines in the country. In this period local foundry units started manufacturing castings for oil engines industry of Kolhapur, M/s. Cooper Engg. Works of Sataraa & M/s. Kirloskar oil Engines, Pune. The growth in automobile industry in and around Pune, like Telco, Mahendra & Mahindra and Bajaj company has given further growth in the demand for C.I castings which is being met by Belgaum Foundries. Setting up of public sector plants like BHEL and HMT in Bangalore and Kirloskar group of companies of Hubli and Bangalore also helped in the growth of Foundry cluster at Belgaum.

The Belgaum Foundry Industry has witnessed a speedy growth in 1970's & 80's A number of Foundry units have increased from 35 units to more than 100 by the end of 80's However, for the last 10 years a growth has declined & no new units have come-up. The main reason for this is the pollution emitted by foundries which requires clearence from pollution control board.

Structure of Industry

I. Pattern Makers

There are about 30 pattern making units in Belgaum Foundry Cluster. Patterns are made mainly, from Wood & Aluminum.

II. Raw Materials Suppliers

There are about 20 dealers who supplies raw materials, like Pig-iron, coke, sand & foundry chemicals. These dealers directly buy from Kudremukha Iron ore plant, Hospet & SESA Goa.

III. Casting Units

In Belgaum Foundry Cluster there are 110 casting units which manufactures various types of castings required by major buyers. These castings are made as per design provided by the buyers.

IV. Machining Units

Nearly 400 machining units are working in Belgaum Cluster, these units gives final finish to the castings manufactured by Foundry Cluster units.

V. Major Buyers

There are about 25 large scale units located in Maharastra & Karnataka state of which major units like Mahindra & Mahindra, Telco, Bajaj, Kirloskar Group, BHEL, Kirloskar Electric, Simens, Crompton Greves etc.

Analysis of Business Operation

Introduction ✈

Foundry defined : Foundry deals with the process of making casting in moulds formed whether sand or some other material.

Casting process : It is basically one of introducing molted metal into a cavity in the mold, previously shaped as desired and allowing it solidifies.

The white process of producing castings may be classifies into six stages -

1. Designing system ~

Method and Gating : The design supplied by customer is further designed to provide with necessary allowances and selection of parting line. Method and gating are the tools for achieving this process while methoding consists of feeders, which compensates the shrinkage in the castings, the gating system consists of spruce and runner and in gates which allows the moten metal into the mold.

2. Pattern making ~

Replica of the castings are prepared on the basis of drawings given by the customers. Patterns are made with wood and aluminum.

3. Molding and Core making ~

Moulds are prepared in the sand with the help of patterns to get the same shapes to pattern. Core making will be useful for getting hollowness in the casting.

4. Melting and Casting ~

Metals will be melted in suitable furnaces to get the required compostion and motten metal will be poured into the molds.

5. Fettling ~

After solidification of castings, these will be removed from mold boxes and unwanted metal attachments like runners and raisers will be removed and sand adhered to the castings will be cleaned. Later these castings will be sent for further operations like heat treatment and machining.

6. Testing and Inspection ~

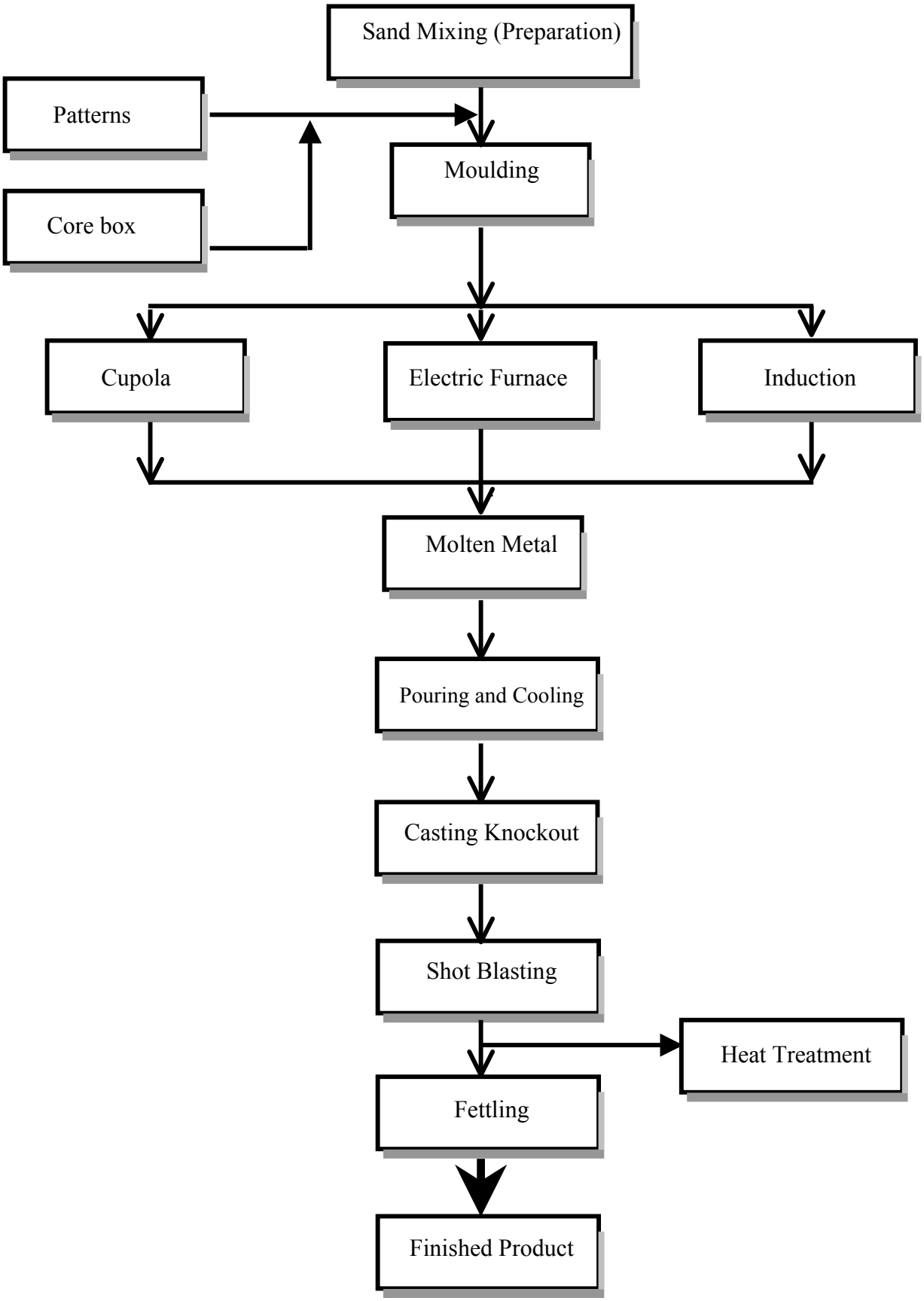
Before dispatching of the castings, visual and dimensional inspection carried out. As per customer requirement non destructive test like ultrasonic radiography tests are carried out to know the internal soundness of the castings.

Through the above process appears to be simple, the foundry men will have to take care of about 100 parameter, right from selection of raw materials to dispatch and demands technical knowledge for obtaining better quality castings.

Unit Operation of Typical Foundry ~

Sl. No.	**Name of Operation**	**Process**
1.	Stores Management	Supply of material to the production unit, records are kept for the supplied material and inventory control
2.	Mould sand preparation	Sand preparation for the mould making
3.	Core preparation	Sand preparation for core making
4.	Melting	Preparation of the molten metal of desired quality
5.	Molding	Making of the mould
6.	Knock out / shake out	Eliminating sand from the casting
7.	Tumbling and shot blasting	Cleaning the surface of the casting
8.	Inspection	Inspection of the casting
9.	Fettling	Grinding for dimensioning and good finish of the product
10.	Machining	Preparation of the product

: FLOW CHART OF FOUNDRY :~



Business Operations of The Foundry

- There are about 110 foundries are working under small scale sector in Belgaum cluster.
- Nearly 99% of foundry units are manufacturing C.I casting and alloy steel.
- Most of the Belgaum foundry units are doing jobbing type and they supply castings to different manufacturing units. Product design is being provided by mother units who buy castings.
- Nature of ownership is mainly proprietorship and partnership and a few units are Private Ltd companies.
- Prices of castings are based on rate contracts and tender inquiry.
- Approximately 30 small foundry units are working on labour charges. Traders supply raw material and buy finished castings.
- Nearly 10 units have acquired ISO 9000 and few more units are in the process of acquiring.
- Five units are exporting their castings but other good working foundries have not made serious efforts to enter export market.
- Nearly 400 machinery units are working to give final finish to the castings. A few units have their own machine shop.
- Foundry sector consumer maximum energy and it constitute important cost for manufacturing castings. However foundry units here have not made serious efforts to adopt energy efficiency practices.
- Labours comes from rural areas and labour absenteeism is found during harvesting and sowing seasons. This affects working of foundries.
- Foundries generate wastes such as waste sand, slug, waste water, waste chemicals and binders, collate organic and particular commissions. This polluting is major thereof to the environment, regulatory body is insisting to take ;measures for disposal of waste but so far no concrete steps were taken to implement a project on sand reclamation. In this regard foundry cluster of howrah has the best international know how and expertise in foundry processing bringing saving in energy cost and larger cut down in toxic emissions.

Analysis of Business operation (problems identified)

The Following section presents an analysis of business operations for the foundry cluster. The analysis is built on the following factors viz,

- Raw Material
- Machinery and Technology used
- Products & Marketing
- Background of the entrepreneurs & their enterprises
- Man power requirements
- Infrastructural facilities
- Business development services.

Raw Material ✈

Major raw material required by foundry units are pig Iron, steel scrap, coke, sand and foundry chemicals like Bentonite powder, Graphite powder, Coal dust powder, Lime stone, Ferro manganese etc. There are around 20 dealers who procure raw material from Goa, Hospet, Kuderemikh and supply to the foundry units. Raw material cost constitutes major part of the castings M/s. Seasa Goa is catering most of the Pig Iron requirement as the quality of the pig Iron is better than other companies. It has monopolized raw material market and dictating the terms of price and supply. Once the foundry units were getting pig iron and coke on credit basis but at present due to change in demand and supply condition they have to make advance payment and make bulk purchase. The small foundries with turnover of Rs. 25 to 30 lakh are finding it difficult to buy in bulk due to lack of funds.

Coke is another major raw material for foundry industry, most of the foundries are using imported coke as the percentage of ash is very less as compared ;to the coke coming from Bihar. But the prices of imported coke is very high.

There is Belgaum Coal and Coke Consumers Association Ltd., which was setup 1953 which are to make bulk purchase of coke and supplying to the units. But unfortunately this society cannot grow because major foundries are directly buying from the companies to avoid sales tax and service charges. However this association is helping the small foundries who cannot buy in bulk from companies.

The prices raw material mainly Pig Iron, Scrap and Coke has doubled within one year and the trend is increase further. But the prices of casting have not increased proporatately. As such at present the foundry units in particular small foundries are facing the hardship & there is threat of closure. The payment period for the casting supplied has gone up from 90 days to 120 days.

The PigIron which is major raw material is being procured mainly from M/s. Sesa Goa Ltd, Kudremukh Iron Plant, Hospet and from M/s. Kirloskar Ferrous. The quality of Pig Iron from Sesa Goa is good compared to others but the prices are very high and material will be supplied only against advance payment. Here IIF Belgaum chapter has yet to find way to tackle the monopoly of one supplier who has dominated the raw material market.

Process Material ✈

Process material like sand, sodium silicate, coal dust, Co_2 gas and other chemicals used in the casting industry are made available from local dealers. Sand is mainly supplied from Mangalore and Kumta.
There is material testing labs in Balgaum for testing raw material and foundry chemicals and foundry units are making use of this lab.

Machinery ✈

Melting unit is the heart of any foundry unit. Induction furnace, oil fired furnace and pif furnace are the range of melting units. Here majority of the units are using cupola system which are fabricated locally and based on old design.

A few units have gone for modernization by adopting divided blast cupola which is efficient interms of melt to coke ratio, high conversion ratio, uniform temperature, lesser rejection rates and higher output. DBC also emits less pollution compared to conventional cupola.

Sand Muller Mixers ✈

These are used for preparing the sand and are alternative to manual mixing. Sand mullers and mixture provides uniform mixing of ingredients and binders and ultimately improve the qualify of castings.

Sand Blasting Machines ✈

Basically it is used for cleaning the sand adhering to the castings, manual cleaning causes dent on castings results into poor surface finish, But machines can obviate these problems. At present a good number of units in Belgaum have this facility.

In Belgaum cluster 80% of the unit are using conventional type of cupola with floor Moulding and fettling etc using grinder and hand clipping. For better results using latest technology is essential which brings lesser rejection rates and higher out put. The old technology is also causing pollution. At present 20% units are using induction furnaces but the shortage of power and higher electrify rates is major obstacle in adopting better methods of melting.

Man Power ✈

Both skilled and unskilled workers an available in the industry. Since labor are coming from surrounding villages in agricultural season labors absenteeism is found this problem has to be tackled by attracting labors from local area. There is a need to establish specialized training center to constantly upgrade the skills of the labors.

Marketing (Domestic and export Market) ✈

Foundry Industry of Belgaum is not facing much problem in marketing their castings. They have established customers who place regular orders . However serious efforts have not been made to tap export market. At present around worth of Rs. 6.00 crores castings were exported annually, but still

there is good scope for the Foundry units which are manufacturing quality castings to enter into export market. There is good demand from USA, UK and Germany Participation in International Trader Fairs, Displaying Publicity, common Catalogues, Brochure is essential to tap export.

Foundry units are catering the needs of raw castings and machined castings of major units of within the state and surrounding status. But very units have entered commercial market by way of producing finished product, like sanitary fittings.

The following items are manufactured from the castings supplied by Grey Iron Foundries of Belgaum:~

i. Machine Tools
ii. Diesel Oil Engines upto 10.00 HP
iii. Diesel Oil Engines for marine
iv. Diesel Oil Engines and generator parts for generating electricity
v. Light commercial Vehicles
vi. Heavy Vehicles
vii. Earth moving machinery
viii. Tractors
ix. Elevators
x. Cement, oil mill, flour mill and food processing etc machinery
xi. Pumps & Valves for water and drainage
xii. Pumps & Valves for chemical industries
xiii. Pipe fittings, drainage equipments like manhole covers etc
xiv. Electrical Machinery
xv. Power loom Parts
xvi. Wood working machinery
xvii. Textile compressors
xviii. Sugur machinery etc.

Some of the large/medium scale industries listed below arte the main consumer of the grey iron castings produced at Belgaum:~

i. M/s. Kirloskar Cumins Ltd., Pune
ii. M/s. Kirloskar Oil Engines Ltd., Pune
iii. M/s. Kirloskar Pneumatics Ltd., Pune
iv. M/s. Mysore KirloskarLtd., Hubli/Harihar
v. M/s. Kirloskar Electric Co., Ltd., Hubli/Bangalore.
vi. M/s. Ashok Leylends Ltd., Ennore, Madras

vii. M/s. Bharat Earth Movers Ltd, Bangalore/Mysore/KGF
viii. M/s. Bharat Heavy Electrical Ltd., BasngaloreRanipet/Hyderabad
ix. M/s. Walchand Industries Ltd., Walchandnagar/Satara
x. M/s. Telco Ltd., Pune
xi. M/s. Mahindra & Mahindra Group, Thane/Mumbai
xii. M/s. Atlas Cioci (India) Ltd., Pune
xiii. M/s. Thermax Ltd., Pune
xiv. M/s. Tractors & Farm Equipment Ltd.,
xv. M/s. Otis Elevators Ltd., Bangalore/Mysore
xvi. M/s. Manugraphs Ltd., Kolhapur
xvii. M/s. Bemco Agro Implements Pvt Ltd., Belgaum
xviii. M/s. Bemco Hydraulics Ltd., Belgaum
xix. M/s. Bemco Jacks & Allied Products, Belgaum
xx. M/s. Indal (Mines) Chandgad, Dist Kolhapur
xxi. M/s. Dandeli Papers Ltd., Dandeli, UK Dist
xxii. M/s. B.D.K Valves Ltd., Hubli
xxiii. M/s. Akay Industries Ltd., Hubli

Apart from the above, the castings are used for replacement of parts in the industries like sugar, textile, cement, mining, paper mills, automobile spares, Diesel Engine spares etc. They are being regularly supplied from grey iron foundries and commercial products for sanitary, irrigation , grills, agricultural implements etc.

Existence of Inter-Firm & Intra-Firm Linkages ✈

In Belgaum Foundry cluster there is existence of Inter-firm and Intra-firm linkages. The existing units with spare capacity gets orders from other foundry units. More than 400 machinery units are here doing machining of castings. This sub-contracting has developed specialisation and giving better finish to the castings. There is a good leakages between foundry units, pattern makers, raw materials dealers & machining units.

Term loan and Working capital ✈

Finance is not a problem for foundry units of Belgaum. State Bank of India, Belgaum Industrial Co-operative Bank, SBM SSI branch do provide credit, discounting bills etc. However at present due to volatile situation in raw material prices and delayed payments form customer, foundry units are in difficult situation.

Entrepreneurship ✈

Belgaum Foundry owners are very much enterprising many of the enterprises are technocrats and run the industry efficiently. Belgaum foundry is bench mark for other foundry. However there is a need to develop management skills to adopt professionalism in Business.

Infrastructure ✈

The enterprises are mainly located in Udyambagh, Angol Industrial Estate and Machhe Industrial Estate. Apart from foundry and machinery units, most of the other SSI units of the Belgaum and supporting institutes are located here. Like other industrial estates in India, there are problems of power cut and road conditions are not conducive.

Business Development Services ✈

To some extent there is growth of Business development services in the cluster. There is material testing lab for testing foundry raw materials, there is management institute. IMER which conduct seminars on better management practices. However expertise on market development, export promotion cell, center for design development are not existing. Hence there is need to develop such services to meet the challenges of competitive market.

Supporting Institution ✈

There is well established network of support institutions catering into the needs of the industry which are listed below.

- *Belgaum Material Testing Center :--*

  There is material testing lab at Belgaum which was set up by Belgaum SSI, Association of Udyambag. This testing center was promoted by Govt. of India,. State Govt, SIDBI, KSFC, KSSIDC, Bank donation from members. Testing lab is equipped with required equipments and machines for the following testing

  1. Testing of foundry products
  2. Physical testing
  3. Chemical testing
  4. Micro structure analysis
  5. Metrology

For foundry units, sand testing like fresh sand, green sand, core sand and shell sand are being tested here and also chemical analysis is done for various ferrous and non ferrous alloys. Facility is also available for testing foundry chemicals to further improve testing facility to foundry units, induction of spectrometer for the analysis of the finish casting is required. Foundry units of Belgaum are making maximum use of this testing labs and provides sufficient revenue to run the center.

✶ *Project Uptech :--*

The State Bank of India under project uptech scheme of Govt. of India has taken up foundry cluster of Belgaum since 1997 under the project detailed studies were carried for technology upgradation, organized technical seminars, training shop floor personnel etc. , under this scheme Rs. 5.00 Lakh was given to testing center to acquire radiograph equipments. Recently it has come out with new project for energy efficiency, under this if subsidies 50% of the consultation fee for caring energy audit and for preparation of project report. Finance is also given for accruing machining including cost of renovation etc., foundry units can made use of this scheme.

✶ *Government Functionaries :--*

Govt. of India under Ministry of SSI and State Government and its under takings are providing necessary support to the foundry units. KIADB and pollution control board are trying to solve the pollution problem of foundry units. However yet it has not been possible to find solution to this problem. Foundry units have make use of the Ministry of SSI schemes like Market Development Assistance, Reimbursement for acquiring ISO 9000, ISO 14000, participation in International Trade Fair in SIDO stalls.

✶ *Associations :--*

Belgaum Coal & Coke Association.

This coal & coke association was setup in 1951 under co-operative act. It was pioneer in buying coal & coke in bulk and supply to the foundry units, but in the course of time major foundry units have started buying directly from the companies. As such at present coal & coke association is not doing much business. However this association is catering the requirement of small foundries is in need for all foundry units to buy from association so as to strengthen it.

Belgaum SSI Association ✈

Belgaum SSI Association is a noted agency which is working for the common cause of SSI units of Belgaum. This association is very active, organizes seminars on various industry related subjects. For

the benefit of entrepreneurs shortly sub contract exchange will be setup. Foundry units should think how best they can use this facility.

Institute of Indian Foundry-men (IIF) - Belgaum ✈

Institute of Indian Foundry men (IIF) which is national body registered at Kolkatta, set up in 1950, is the prime mover for development of foundry in India. IIF works through its head office at Kolkatta. Four regional branches and 27 chapters spread all over India. Every member ;is reached through "Indian Foundry Journal"

It organizes annually the Indian Foundry Congress and Exhibition of equipment, buyer-seller meet, promoting export of foundry products. It is providing technical services to member companies maintaining data bank of foundries. This institute is a member of World Foundrymen organization (WFO) Zurich and CII New Delhi.

IIF - Belgaum chapter is affiliated to IIF Kolkatta is active and has taken lead role in developing the Foundry Industry of Belgaum. It has membership of 147 members, It regularly conducts workshop, seminars and awareness programmes on technical subjects related to Foundry Industry.

During last year IIF Belgaum chapter organized a number of technical meetings mainly activity base castings in Foundry Industry, energy efficiency improvement & pollution reduction in cupola furnace, cost reduction, break even point in foundries etc.

Though the IIF - Belgaum is active abut it has act collectively in solving problems arised by sharp increase in Raw Material Prices, collective bargaining for the prices of castings, better dissemination of improved methods of Foundry practice. Interaction with pollution control board addressing the problems of small foundries etc. IIF Belgaum chapter go for own building and run regular office to look into day to day issues, common display center is also necessary to attract customers from within and also aboard. Visiting International Trade Fairs, common brochures, publicity through web site is also required.

Issues Concerning Belgaum Foundries - Perceived Gaps ✈

Foundry sector in Belgaum has made significant progress. However, there is need to focus on following issues for holistic development of Foundry units in Belgaum.

- ✶ Technological issues

(1) Bringing better quality in casting by following quality specifications.

(2) Improved Foundry practices.

(3) Going for Mechanization

(4) In plant training programme are needed to improve the productivity, reduce wastage and conservation of Energy.

(5) Introduction of divided blast cupola.

(6) Waste minimization.

(7) Pollution Norms.

✶ Managerial issues

(1) Introduction of Management Information System. This gaives feed back about the health of the unit.

(2) Training to the managerial staff and workmen.

(3) Bench marking with other Foundry Industries.

✶ Financial Issues

(1) Better Management of working capital.

(2) Promotion of Bill culture.

(3) Introduction of just in-time inventory.

(4) Cost reduction through bulk raw material purchase by group of units and marketing by common brand name.

✶ Marketing Issues

(1) Pricing of the products/

(2) Tapping effectively domestic and export market.

(3) Joint participation in domestic and export market.

✶ Support Institutions

(1) Interaction with associated Institutions like SISI, DIC, NSIC, PCRA and other relevant bodies.

(2) Involving final Engg. Students in Foundries as part of their summer school programme.

(3) Exposure visit of IIF - Belgaum Chapter to other places.

Related Industries

1) Interaction with major buyers to get the feed back to improve the quality and market changes etc.
2) Constant touch with the testing lab.

Swot Analysis of the Cluster

Strength ✈

Markets

- ✶ Strong presence in the domestic market
- ✶ Capable to adopt easily to the changing market conditions
- ✶ Wide range of customers particularly in Automobile Industry
- ✶ Capable of entering into export market as quality of castings is of International Standards.

Technology

- ✶ Several units are ready to adopt latest technology.
- ✶ Modern machining units are existing to give better finish to the castings.
- ✶ Units are flexible to adopt better Foundry practices.
- ✶ Due to availability of Testing laboratory, quality of Raw material is tested to produce good quality of castings.
- ✶ Foundry Industry has established linkages with engineering colleges for refining technology.
- ✶ Technology for reclaims of CO_2 sand has been introduced.

Innovation Capability

- ✶ Several units which were owned by techno-crats are able to develop improved machine & innovative Foundry practices.
- ✶ Flexible operating system.

Skills

- ✶ Both skilled and un-skilled workers are available
- ✶ Better education institutions like ITI, Diploma Colleges are existing and they are source for skilled workers & supervisors.

Inputs Availability

- ✶ A good dealer network is there for supply of pig iron, steel scrap, coke,
- ✶ Raw materials are easily available.

Weakness ✈

Market

- ✶ Most of the Foundries are doing job work but efforts are not made to manufacture their own finished products.
- ✶ Very few units have taped export market

- Several Foundries are trying to sell in particular segment, as such margins are thin.
- Small Foundries are at receiving end as traders/middle man enjoying most of the profit in value chain.

Technology

- Traditional system of production 80% of the units are using old cupola system.
- Efficient manufacturing practices are not used.
- Little attention is given for energy conservation

Inputs Availability

- Inputs are available but the suppliers are dictating terms.
- Imported coke is used buying at high prices, domestic coke is of low quality and ash content is more.

Business Environment

- Lack of collective efforts for bulk purchase of raw material like pig Iron, steel, coke etc. for reduction of cost.
- Lack of sharing experience among cluster actors regarding improved foundry practices. Market information / technological development.
- IIF Belgaum does not have own premises to run the office regularly, library facilities etc.

Opportunities ✈

Market

- A Good scope for export of castings to the European countries
- Good potential to market in other segments of domestic market.
- Market can be increased under common brand name and a publicity through various means like common brochures, catalogues, CDs & through web sites.

Technology

- The new environmental polices Govt. of India needs cleaner technology or echo-friendly process, energy savings will have impact on the cast of castings.
- Major Foundries can go for small size sand reclamation plant.

Inputs availability

- Setting up of common raw material depot will enable the Foundry units to get raw material at reasonable prices.

Threats ✈

Market

- ✶ China could be a strong competitors and making rapid technological advancements and competitive in terms of quality, prices and delivery schedule.

Technology

- ✶ Growing environmental concerns regarding pollution emitted by foundries may bring legal complication & also results in closure of units.

VISION

Belgaum Foundry Cluster will be made globally competitive by adopting best practices in technology, marketing, production system following environmental standards & by strengthening supporting institutions.

We aim to achieve quantum growth by making Belgaum Cluster an important sourcing point for multi national companies & pursuing export led growth