

## VISION 2020: Executive Summary:

### I. Preamble

#### Background

The year 2011 augured well for the Indian foundry industry as it has been acknowledged<sup>1</sup> as the world's second largest producer of castings (7.4 Million Tons per Annum - MTPA) based on Tonnage in the year 2009. They were placed second only to China (35<sup>2</sup> MTPA). The large gap between India and China, along with the fact that the foundry industry is not able to keep up with the local demand both in terms of quantity and quality have compelled them to go in for a detailed analysis of the sector. The compounding factor is the visible impasse in the investments in the foundry sector especially in comparison to the planned investment in the user industry i.e. auto and auto parts. This has propelled The Institute of Indian Foundry men (IIF) to initiate this study. The terms of reference (TOR) of this study aimed to draw a Vision plan 2020 for the foundry Industry and recommend the needed initiatives to realise that vision.

#### Methodology

As a part of preparation of the vision plan the following steps were taken – (1) a detailed survey of 325 units covering all regions, sizes of units and products. On an average 4 man hours were spent in each unit. (2) 100 CEOs and decision makers were formally and personally met and their views were elicited. (3) A desk study was done to understand the changing trend in the Foundry sector. The response to the survey and the personal meetings were spontaneous and reveal the current situation and the minds of the different players. The collected data was analysed using the diagnostic / current reality tree<sup>3</sup> approach to arrive at the key issues and the steps to be followed to overcome various constraints. Based on the issues identified, suitable supportive/corrective interventions are spelt out to ensure the achievement of the Vision Plan.

### II. Overview of the Industry

#### Global scenario<sup>4</sup>

It is estimated that in 2009 there were 46,906 foundries globally in the organised sector producing 80.3 Million Tons. The global production had a roller coaster ride during the period 2008 to 2010 i.e. – 93.5, 80.34, 83.55 MMT in 2008, 2009 and 2010 respectively. It is expected to bounce back<sup>5</sup> to 93.5 MMT by 2015/6.

The position of Foundries is of conflicting importance among the manufacturing industries. The castings alone account only for 0.31% of the world GNP and 5% of the world metal production. Thus Foundries do not rule the world economy. But as main inputs into nearly all industrial products and daily life, this casting industry is indispensable<sup>6</sup>.

A major happening in the global scenario is the shift and moving of manufacturing bases from developed countries (Europe and US) to third world countries especially in Asia. Also China, the number one producer in the world, is now focusing on domestic demand created by its recent 1.5 trillion U.S. dollar investment<sup>7</sup> in the infrastructure development. This temporary diversion of Chinese output has created a vacuum in the international market to be taken up by upcoming foundry producers like Mexico, Turkey, Poland, Czech Republic, Russia apart from India,

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<sup>1</sup> As per the 44<sup>th</sup> census of World Castings production. This is the latest figure that is available in the industry.

<sup>2</sup> A Modern Castings staff report December 2011

<sup>3</sup> Technique propounded by Eli Goldratt

<sup>4</sup> Based on the desk research done by the study

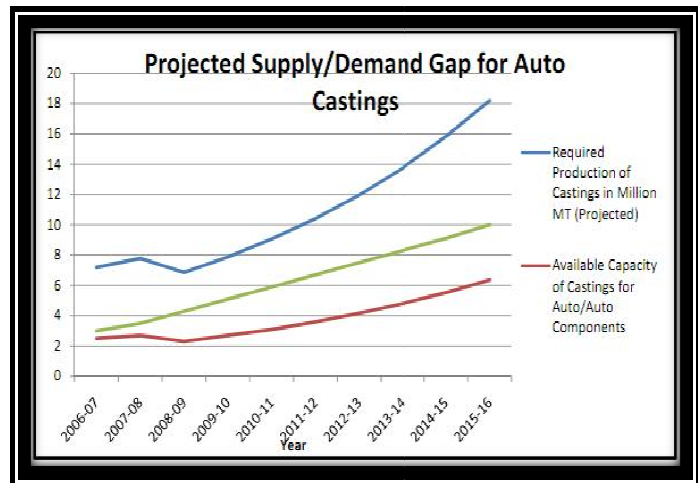
<sup>5</sup> As per reports in Modern casting Dec 2011

<sup>6</sup> Foundry journal, Yaylali Gunay, Turkey Jan/Feb 2011

<sup>7</sup> Simon Kennedy and Rich Miller, May 2011 in The Standard

**Indian Scenario:**

India has 4600 foundry units, 80% of them in SME sector. Annual production is 7.4 Million Tons, approximately valued at \$8 billion. The sector employs 0.5 Million people directly and an additional 1.5 Million people indirectly. The industry is making a contribution of Rs 7000 per ton produced to National exchequer by way of Excise and other levies. Sector exports touched 215 Million US\$ in 2010/11. The manufacturing units are located in 12 identified and recognised clusters and in 20 other clusters.



Graph 1: Supply/Demand Gap for Auto Castings

**Projected Market Size:**

While there is a growth expected in the auto-sector and the casting sector alike, the domestic market is set to surge at least 3 times by 2016. The auto sector alone should go up to \$10 billion by 2016 and the casting industry is projected to be a \$19.2 billion industry by 2016. The global growth rate for castings follows approximately twice the global growth rate in GDP in absolute terms. So apart from the domestic demand, India’s exports are to go up to \$3 billion with a 20% growth in direct exports.

	Current Contribution	Current Value	Projected Growth by 2016
Auto Sector Demand	32% of demand	\$ US 2.5 billion (~2.18 MT)	\$US 10 billion
Casting Industry for manufacturing	Over 90% of the local demand is locally met	~\$ US 18 billion	\$ US 19.2 billion (17-18 MT)
India Exports	15% of production	~\$ US 1 billion	\$ US 3 billion

**Projected Demand-Supply Gap:**

While there is a clear picture of demand side, the supply side is not prepared to make pro rata investments to take up the opportunity arising out of growth. Even assuming that the past growth rate would continue there will be a large demand – supply gap in excess of 11 million TPA by year 2016. (Please Refer Graph 1)

**III. A diagnostic study<sup>8</sup> of the foundry sector in India**

The data collected (from the 325 units and 100 personal interviews) are analysed with a diagnostic tree and the key findings based on them are summarised below:

**Determination of Level of Foundry:**

The industry has five<sup>9</sup> distinct levels (Refer Fig. 1) of units based on the size and sophistication each having its own dynamics of growth and plans. The market has also has 4 tiers and each level of unit has found its own market segment. The foundries and markets are nicely dovetailed to each other in terms of price. But there is a disparity in terms of quality and quantity – between the market expectation and the supplies.

<sup>8</sup> The study was carried out during the period November 2010 to May 2011 by Swaraat Consultants of Mumbai

<sup>9</sup> The five levels being - Levels L0 to L4. The level L5 is yet to be introduced in Indian scenario.

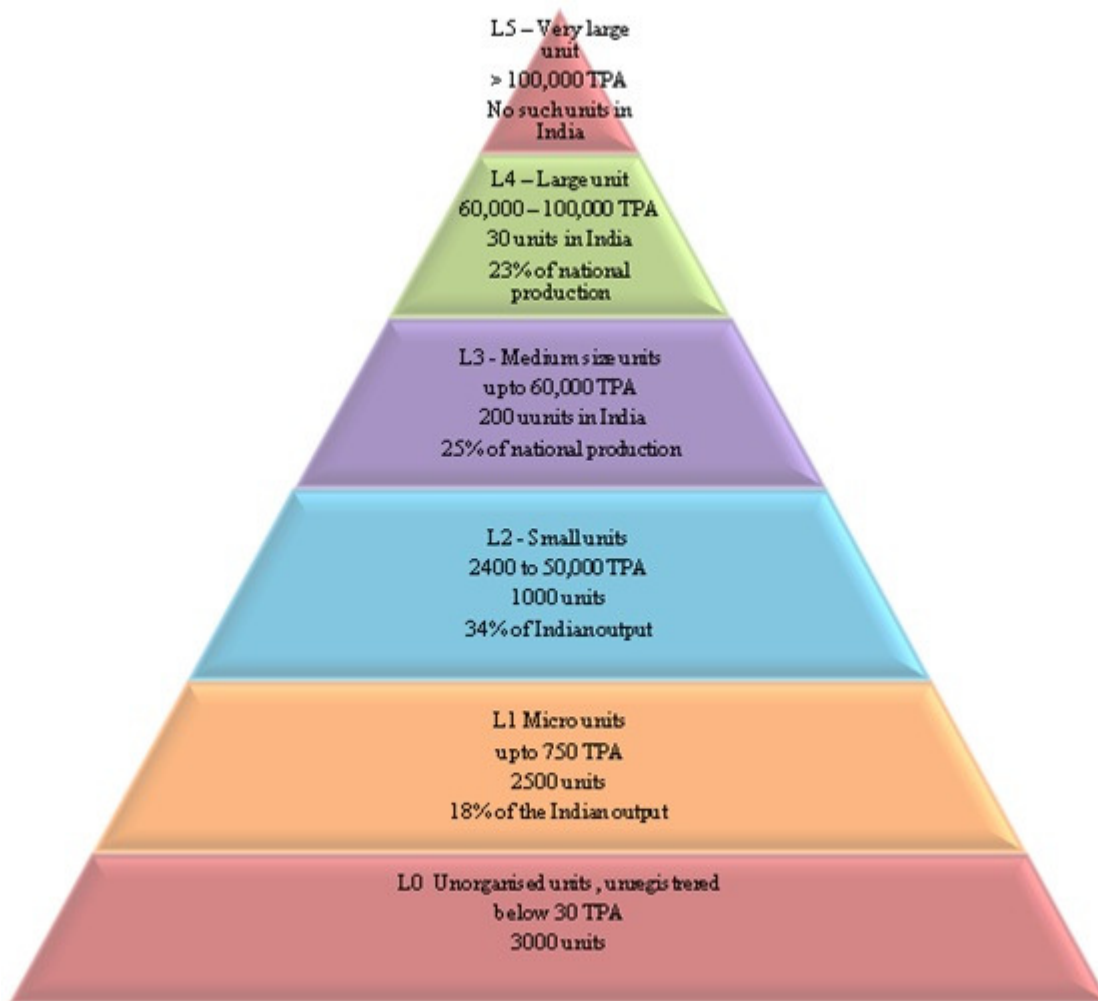


Figure-1: Pyramid Diagram depicting the 5 Levels of Foundries

The Shuttle cock diagram (Refer Fig 2) shown indicates the various levels of the foundries and is used as a tool for mapping their current level from L0 – L5:

1. Structure
2. Capacity
3. Manpower Strength
4. Available facilities
5. Products covered
6. Markets served
7. Quality levels
8. Management practices

## SHUTTLECOCK DIAGRAM FOR LEVELS OF FOUNDRY SECTOR IN INDIA

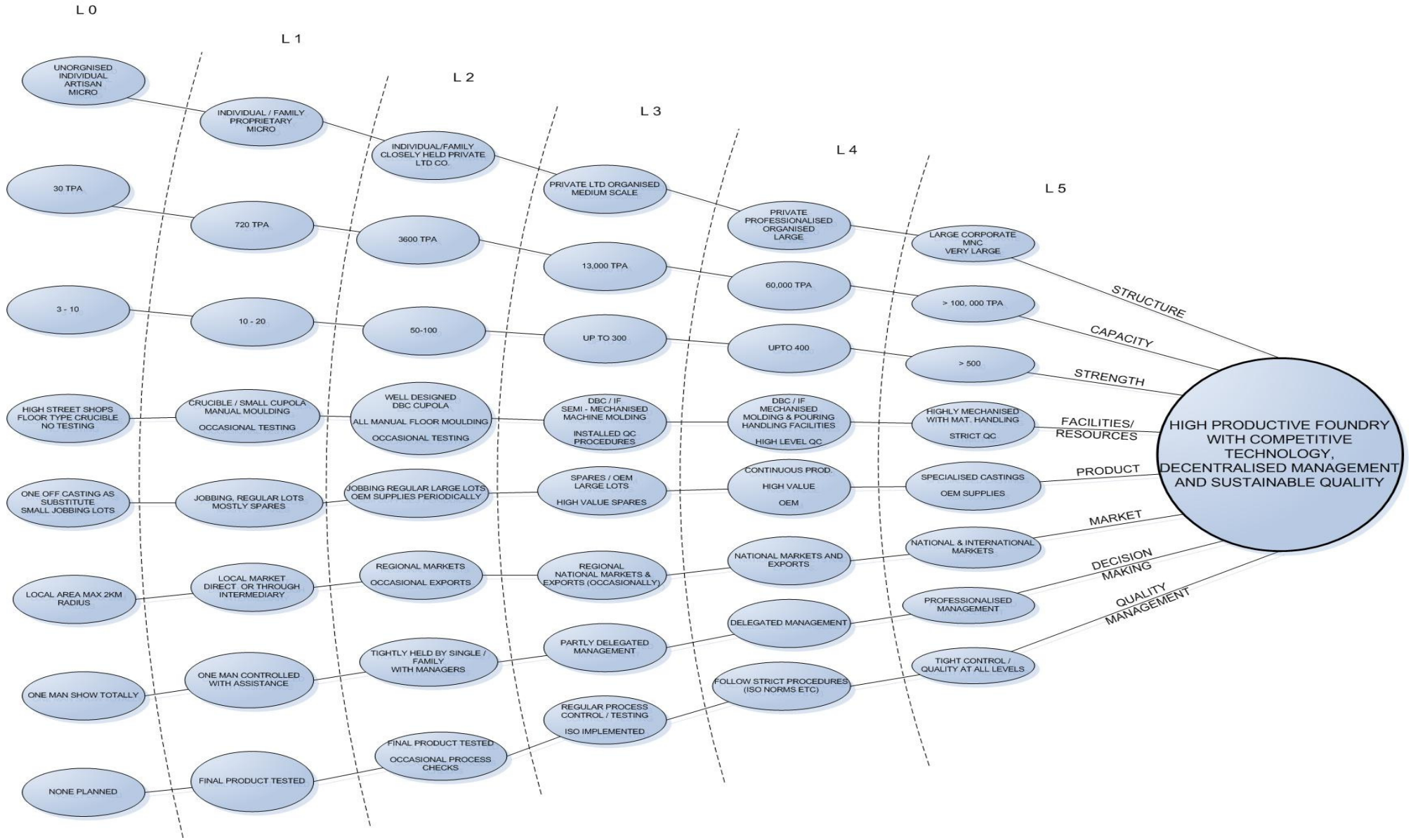
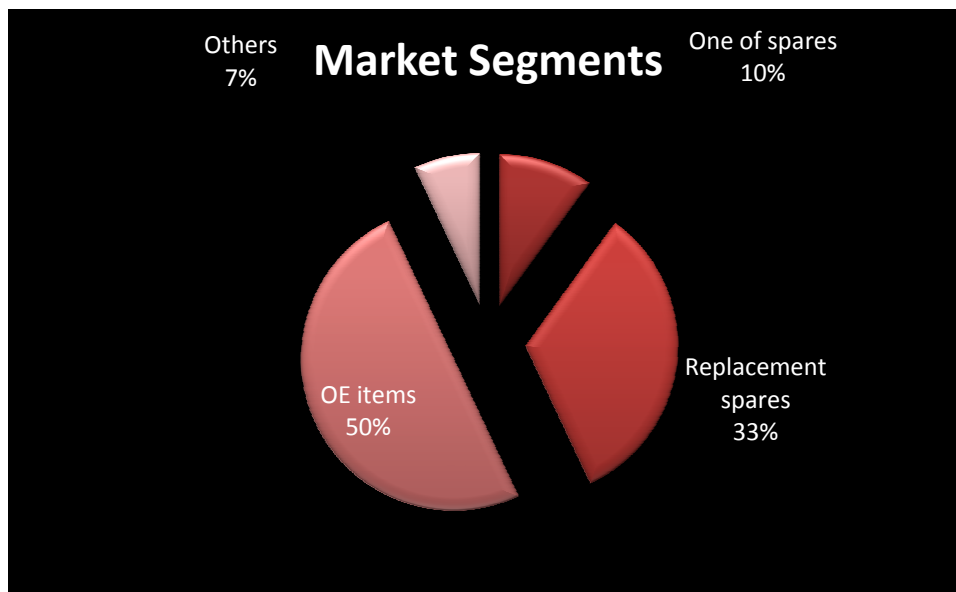


Fig 2: Shuttlecock Diagram depicting mapping of 5 levels of foundries

## Market Segments in the Foundry Industry



## Important Findings

	<u>Challenges</u>	<u>Prospects / Limitations</u>	<u>Status</u>
Land	<ul style="list-style-type: none"> <li>No land to balance melting capacity</li> <li>Over 40% operating at unviable economical levels</li> </ul>	<ul style="list-style-type: none"> <li>No access to resources to expand production</li> <li>No surplus funds for new investment</li> <li>No command on Bank / FI finance due to Proprietary status and status of accounts</li> </ul>	<ul style="list-style-type: none"> <li>Assistance and awareness required at the lower level</li> </ul>
Succession Plan (MSME Level)	<ul style="list-style-type: none"> <li>No succession plan from L1-L3 (often owner-managed)</li> <li>Regarded as a dirty business</li> </ul>	<ul style="list-style-type: none"> <li>Family run businesses with no interest from the next generation</li> <li>Prospect of the business being reduced to land value</li> </ul>	<ul style="list-style-type: none"> <li>Loss of these foundries has a major impact at the macro level</li> </ul>
Partnership of "User" Segment	<ul style="list-style-type: none"> <li>Demand from user segments of higher quality &amp; cheaper price</li> </ul>	<ul style="list-style-type: none"> <li>Present size of unit, legal structure, and absence of professional management are not attractive to users</li> </ul>	<ul style="list-style-type: none"> <li>No partnership between the "user" the "mother"</li> </ul>
Investments	<ul style="list-style-type: none"> <li>Demand supply gap projected at 10-12 MTPA by 2020</li> <li>Increase in productivity alone not sufficient</li> </ul>	<ul style="list-style-type: none"> <li>Investment required for new technologies to increase capacity to excess of 100000 TPA</li> <li>15 such units can give upto 2 Million TPA</li> </ul>	<ul style="list-style-type: none"> <li>Indian foundry must follow suit of countries such as Mexico which plan 600,000 TPA for NAR through investments</li> </ul>
Quality	<ul style="list-style-type: none"> <li>Globally 200 OEMs consume 50% of global casting</li> </ul>	<ul style="list-style-type: none"> <li>Defined strategy required to increase market share</li> <li>Focus must shift from quantity to quality</li> </ul>	<ul style="list-style-type: none"> <li>Quality levels must move from % levels to PPM levels</li> </ul>

Buyback Arrangement	<ul style="list-style-type: none"> <li>• Environmental norms do not support the relocation of overseas units to India</li> </ul>	<ul style="list-style-type: none"> <li>• Indian entrepreneurs can set-up, build and develop foundries in countries like Africa which depend on exports/buy backs for cost-effectiveness apart from domestic demand</li> </ul>	<ul style="list-style-type: none"> <li>• Set-up capacities in countries like Africa</li> <li>• Part can be used for domestic demands, while rest can be used as export / buy backs</li> </ul>
Product Mix	<ul style="list-style-type: none"> <li>• No value-added products</li> <li>• No method of capturing demand of products and numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Product range and mix need to be aligned to the market</li> <li>• Core competence of the foundries are not identified</li> </ul>	<ul style="list-style-type: none"> <li>• Regional level or National level cell required to convey the demand and core competencies</li> </ul>
Machinery & Mechanisation	<ul style="list-style-type: none"> <li>• Visible gap in Fettling, Sand reclamation, core making</li> <li>• Lack of facilities for Casting simulation, design, pattern making, finishing and testing</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment suppliers not assured of future orders</li> <li>• High cost and low utilisation at individual level</li> </ul>	<ul style="list-style-type: none"> <li>• CFC must pool demand for clusters</li> <li>• Set-up of common facilities</li> </ul>
Pollution Control & Energy Savings	<ul style="list-style-type: none"> <li>• The existing solutions have 2 major drawbacks. <ul style="list-style-type: none"> <li>(1) No acceptability across the country by the various state PCBs</li> <li>(2) Very high cost for L0 to L2 firms</li> </ul> </li> <li>• No critical mass to go for energy efficient machines / devices</li> </ul>	<ul style="list-style-type: none"> <li>• No R&amp;D in low cost mechanisation &amp; Pollution control</li> <li>• Great scope for energy saving measures throughout the sector in all areas, including melting, moulding, core making, and pouring, fettling and material movement</li> </ul>	<ul style="list-style-type: none"> <li>• Standard pollution control device/measure required, to ensure that minimum norms are met</li> </ul>
Skill Levels	<ul style="list-style-type: none"> <li>• Unsafe work conditions in L0-L1 foundries. Safety standards below minimum acceptable level</li> <li>• Lack of skill in operatives</li> </ul>	<ul style="list-style-type: none"> <li>• Non availability of skilled personnel</li> <li>• Unwillingness of new entrants as a promising career</li> </ul>	<ul style="list-style-type: none"> <li>• 20,000 workers (skilled and semi skilled), 2000 engineers and middle level and 100 trainers are needed in the sector.</li> </ul>
Buying Power & Profits	<ul style="list-style-type: none"> <li>• 85% of raw materials in a cluster have common specs</li> </ul>	<ul style="list-style-type: none"> <li>• Best estimate of profits are only 3-8% and 5-10% for large units</li> </ul>	<ul style="list-style-type: none"> <li>• Collective buying could give bargaining power</li> </ul>

- There are a few other issues that are specific to selected states/regions and need tailored local solutions. These are not detailed here.

#### IV. The Vision for 2020

##### 4.1 Need for a Vision:

Foundries have acknowledged that unless the industry resurrects itself in a big way in the next 5 years, the escalating global demand will automatically lead to a flood of imports from China and other new market entrants. The auto / auto component markets will also look for imports only to push the local foundry sector into a downward spiral, stunting its growth. 85% of respondents support the idea of approaching the government/ financial institutes with a vision plan.

Despite various constraints and compulsions, the study has seen a clearly defined aspiration amongst the captains of the sector to seize the existing market potential. This clarity has helped to articulate the vision for the Indian Foundry Sector.

##### 4.2 The Mission:

The Current views & outlooks of the various players and the mission for the future are shown below.

<b>Stake Holders</b>	<b>Current Outlook in the Industry</b>	<b>Mission for the future</b>
Overall attitude of the sector	Pessimism on future is prevalent	To remove the negative vibes from foundries
Owners /Entrepreneurs	Succession issues is a pointer that industry is unattractive	The industry should become attractive to all stake holders.
Society	Society feels that the business is an environment hazard	The industry is made clean and environment friendly
Market	Deny the legitimate price worked out on the basis of cost and the accepted industry margin ( in line with that of the user industry)	Establish professional marketing and vendor cell to command the right price, in line with the user industry.
Supply chain	No visible partnership between the foundries & its progressing market	Restructure the industry to infuse capital from customers
FIs and Banks	The foundry business is not profitable. Better investment opportunities are available.	Improve operational efficiency & productivity to reduce losses/rejections comparable to international bench marks.
New entrants	The industry lacks both brand image and professionalism to attract talent.	Professionalise management along with bringing in modern technology and processes.

##### 4.3 The Vision Statement:

- To make the Indian Foundry an attractive entity for all the stake holders,
- To make Foundry a viable investment option ranking equally among other available alternatives
- Employees enjoy staying there, prospective ones find good enough to consider.
- The industry becomes a clean and environmentally friendly.
- To realise a natural growth with the above and emerge as a leading supplier of quality castings to the global market covering all sectors by 2020

Once the impediments to growth are removed, the growth of output from the sector as a natural corollary can reach newer heights of ~15 MTPA (projected demand for YR 2020)

#### 4.4 The route to be taken to realise the vision

In the current scenario, the price considered acceptable for domestic and global automotives is based on industry standards considering benchmarked efficiency of working (international) and the associated profit margins. Since majority in Indian foundry industry lose on both counts of internationally accepted quality and productivity standards they are not able to command the right price. Inefficient methods, processes and payment terms eat into profits of those foundries that can.

Thus to realise the vision, achieving operational efficiency coupled with assured product quality and thereby benchmarking against international standards will help the units to command a better price. This methodology will also ensure that in an effort to sustain the foundries the user industry is not passed on the burden of avoidable costs.

Once the operational excellence is achieved through the various mission objectives, the market dynamics at that point would determine the market share and the production levels in terms of Tons per annum.

Operational excellence can work well, not on the current scale of operations, but scaled up production from current levels of 7.8 MTPA to about 11 MTPA achievable through the suggested interventions by end of Phase 1 and furthered by prevailing market dynamics at that time.

#### **V. Recommended interventions**

5.1 In order to realise the Vision three types of interventions were required

- (1) To help achieve operational excellence at their respective level.
- (2) To improve the market acceptability and to command the right price from the user market and
- (3) A strong body to implement and hand-hold the weaker units towards a growth path (Fig 3)

5.2 The constraints were analyzed and a diagnostic tree was drawn for the sector. Accordingly, 20 interventions have been recommended. These are listed in the following table.

5.3 The identified 20 interventions are detailed with

- (a) The rationale for the prescription
- (b) The intervention per se
- (c) Methodology to be adopted
- (d) Funds required for carrying out the intervention
- (e) Potential sources for such funds
- (f) The likely impact and
- (g) The anticipated time plan to implement them.

Each intervention is “stand alone” & major capital investments will be needed for less than 50%.

5.4 The proposed initiatives have availed and are aligned to the sound logic used in the existing schemes – but without distorting its own unique features sought by the Foundry sector.

5.5 The initiatives have to be carried out in 2 phases.

Phase 1 – Focus on 6 clusters/centres as pilot projects. Adopt Preliminary Initiatives for 12 clusters / centres to prepare them for complete implementation in Phase 2

Phase 2 – Based on above, these interventions coupled with multiplier effect would help to increase the outreach to cover all the potential clusters.

5.6 10 initiatives are focussed on MSMEs , 3 on large units and the other 6 on the sector as a whole thus entire value chain would benefit from the initiatives and ensure the sector’s balanced growth



<u>Sr. No</u>	<u>Description of Intervention</u>
1	<p><b>The TUF (Technology Upgradation Fund)</b> would be an intervention to address the following areas:</p> <p>(a) Relocation / start-up of units in the FVs  (b) Offering financial support at special concessional rates  (c) Appointing a Professional CEO – for a period of 24 months- partly subsidised CTC for a period of 24 months from the date of commencement</p>
2	<p><b>Capacity Consolidation</b> to identify unit owners in drawing succession plans. All similar units in nearby areas to be moved to a common location and the equipments etc housed there. Such units will be given the necessary support to estimate their current value of business and to merge as one private limited company. They will be given the support of a CA in the area under a special scheme</p>
3	<p><b>New Capacity creation:</b> With a view to facilitate easy entry for such large projects it is recommended to bring in:</p> <ul style="list-style-type: none"> <li>• The concept of “Green channel clearance “ for giving approvals/ clearances - for new foundry units / expansions – applicable to all investors - both from within and outside India .</li> <li>• Allocation of suitable land in the “foundry parks “</li> <li>• Extend to these investments - the concessions given to similar FDI proposals in other areas</li> <li>• Encourage and Support Indian entrepreneurs setting up units in Africa and meeting Indian &amp; Overseas demand through buy-back arrangements.</li> </ul>
4	<p><b>Foreign Direct Investment:</b> With a view to facilitate easy entry for such large projects it is recommended to bring in:</p> <ul style="list-style-type: none"> <li>• The concept of “Green channel clearance “ for giving approvals/ clearances - for new foundry units / expansions</li> <li>• Allocation of suitable land in the “foundry parks “</li> <li>• Extend to these investments - the concessions given to similar FDI proposals in other areas</li> </ul>
5	<p><b>Better Facilities for the units:</b> The intervention is to set up four new “foundry villages” one each in each region of India – north, west, south and central India. There is already a foundry park that is coming up in East (near Howrah) and hence the same can be further strengthened.</p>
6	<p><b>Common Testing &amp; Process Facilities:</b> The intervention is to set up a CFC to meet with the requirements of the cluster – as a separate profit centre. This will run by Professionals and can use existing ones as well. Three of the clusters at Belgaum, Coimbatore, Howrah have already started their efforts and have reached various stages of implementation.</p>
7	<p>The <b>PCB Requirements</b> would be covering:</p> <ul style="list-style-type: none"> <li>• Preparing a common minimum norm acceptable to the various PCBs at state levels.</li> <li>• Preparing the broad list of equipments and their parameters that would qualify the unit prima facie for PCB clearance.</li> <li>• Financial support for the units to install the prescribed equipments on a PAYE basis.</li> </ul>

<u>Sr. No.</u>	<u>Description of Intervention</u>
8	<b>Low Cost Mechanisation:</b> The intervention is to support the units which want to mechanise these operations – by giving a grant of Rs 10 lakhs. This would be part of a standard mechanising package – with a total cost of 20 lakhs mechanisation measures.
9	<b>Training Facilities</b> centres in 5 locations - one each in North, south, west, east & central India close to or within the cluster with training at 4 levels: <ul style="list-style-type: none"> <li>• General skill to carry out work in the foundry as a skilled worker</li> <li>• Specialised training in areas like :</li> <li>• Training to junior / middle level management – the entry is for graduate engineers/ diploma holders</li> <li>• Train a band of trainers, who sustain the market demand for training – even after the exit of the proposed plan and the associated initiatives.</li> </ul>
10	<b>Vendor Development Cells</b> 10 professionally set up spread all over India located in the proposed FVs in order to: <ul style="list-style-type: none"> <li>• Identify the demand for castings from various buyers and assess the quality needs</li> <li>• Establish suppliers from the clusters by matching the production facilities available – especially at L0 to L2 levels..</li> <li>• Hand-hold the L0 and L2 units on a continuous basis to achieve the quality and quantity levels by giving professional advice.</li> <li>• The VDCs will charge a fees for procuring the orders – on behalf of the supplier units .</li> </ul> The VDC can recruit professionals to “match – make” the buyer and the sellers and offer technical & business inputs to the L0 to L2 level firms
11	<b>Support 100 new entrants</b> financially to the courses by giving 50% subsidy on tuition fees and giving a monthly allowance for stay and food expenses up to Rs 2 lakhs per person per year. Also the institutes offering those programs can be given a flat subsidy of Rs 10 lakhs per annum to cover the cost of teaching staff. The units employing them would be subsidised in their staff cost by 50% or up to 10,000 per engineer taken in for job.
12	<b>Graduates/professionals /first generation entrepreneurs</b> support to start new foundries by giving the necessary financial incentives – in the form of seed capital and concessional loans/grants.
13	<b>Market Research Centres:</b> The proposal is to encourage existing market research firms in country to extend such professional support to foundry sector. Also if new professional teams can be established to take care of the foundry related products the same needs to be supported.
14	<b>Health Care of Workers:</b> There is strong case for policy level intervention to strengthen and compliment the state healthcare measures. <ul style="list-style-type: none"> <li>• The workers need to be given (1) compulsorily shoes (2) protective glasses for the eyes</li> <li>• There should be restrictions on the maximum levels of manual handling of molten metal during the various processes</li> <li>• The ambient temperature and dust levels needs to be enforced.</li> </ul>

<u>Sr. No.</u>	<u>Description of Intervention</u>
15	<b>Energy saving measures</b> in all areas – melting, moulding, core making, pouring, fettling and material movement by establishing a revolving fund at cluster level. The local BMO will handle the revolving fund and implement the energy conservation measures through BDSPs.
16	<b>Green Foundry Initiative:</b> Educate the industry on the green principles, its benefits and to demonstrate the same by supporting the establishment/conversion of 10 foundries. These flagships which can demonstrate the benefits would be setting the trend for conversion of others.
17	<b>R&amp; D Centres</b> to carry out development activities in the areas of: <ul style="list-style-type: none"> <li>• Finding low cost automation solutions for foundry</li> <li>• Develop simple functional pollution control devices at affordable costs for L0 and L1 units</li> <li>• Low cost mechanical handling devices that can be used in foundries to reduce the human strain especially at L0 and L1 level foundries.</li> </ul>
18	<b>Set up 5 SPVs</b> in each region/cluster to specialise in the procurement of raw materials – as per the agreed supply schedule for individual units in the cluster. This will give a 15% reduction in input price due to bulk buying after deducting a nominal service charge to ensure self sustained stay of the SPV.
19	<b>Set Up of BDSPs:</b> 2 or 3 in each cluster/centre who will visit the units and introduce simple customised MIS and data sheets. Wherever the entrepreneur is willing to go in for computerisation of MIS, that facility would also be offered by the BDSP.
20	<b>Implementation Body for the Indian Foundry Mission:</b> In the present scenario, with a view to implement the 19 initiatives suggested there is need for a strong stand-alone executing agency operating on a “Mission mode” on fulltime basis. It would have full authority to represent, demonstrate the pilots and implement the various recommendations and professionally monitor the growth. This mission will have a predetermined lifespan of 5 years and will create and strengthen the vehicles to take on the growth thereafter.

**Details of the Financials Projected for the Interventions:**

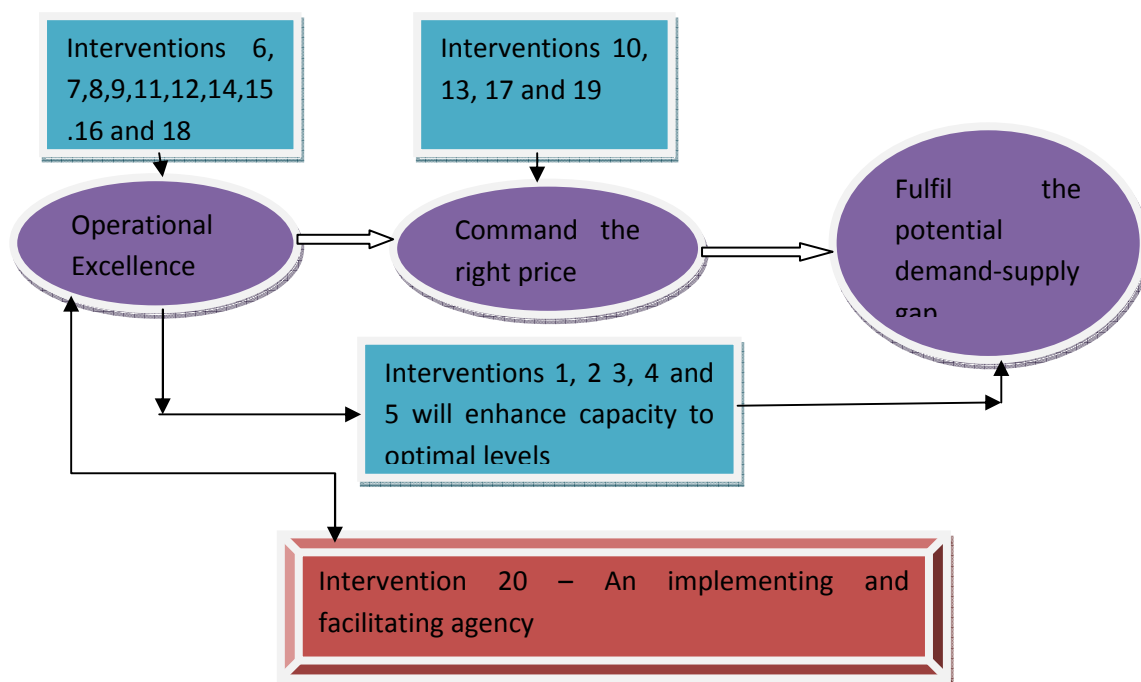
No.	Details of the action	Phase 1		Phase 2		TOTAL	
		Total cost in Rs. Cr	Units benefiting	Total cost in Rs. Cr	Units benefiting	Total cost in Rs. Cr	No. of Units benefiting
1	Capacity enhancement through Technology Upgradation Fund (TUF)	115	80	0	0	115	80
2	Capacity consolidation by promoting Private limited units	4	30	8	70	12	100
3	Climate building for new capacity creation through expansion	1	50	1	50	2	100
4	Promoting foreign direct investment in the sector	52	5	0	10	52	15
5	Creation of 5 new foundry Villages to enable relocation / better infrastructure	100	75	0	50	100	125
6	Common Processing Centres, testing and other facilities – 6 locations	180	150	0	60	180	330
7	Installation of Pollution control measures at affordable costs	25	260	0	235	25	495
8	Use of simple low cost mechanisation at micro and small units	25	250	25	500	50	750
9	Training centres for skill up gradation	12.50	1650	12.5	2000	25	3650
10	Creation of 10 vendor development cell through BDSPs	10	200	0	100	10	300
11	Support to new entrants - in Foundry courses	50	500	40	500	90	1000
12	Graduate / professionals ( 40) – support plan for new units	15	40	0	0	20	60
13	Market research centres – 4 in each region	4	100	0	100	4	200
14	Health care support to workers	5	1000	5	1500	10	2500
15	Energy optimisation measures/plan (Revolving fund in each cluster )	50	2000	0	2000	50	4000
16	Green foundry initiatives	7	30	0	30	7	60
17	Incremental/Application based R&D for low cost pollution control and mechanisation in Foundries	6	6	0	0	6	6
18	Creation of SPVs- 4 in one region (is this right?) – for common raw material procurement	8	400	0	200	8	600
19	Schemes for introduction of costing in MSMEs	5	300	0	200	5	500
20	Creation of an implementing agency for Indian Foundry Mission focused on implementation of pilot projects	20	0	0	0	20	0
<b>GRAND TOTAL in Crores Rs</b>		<b>694.5</b>		<b>91.50</b>		<b>786</b>	
<b>US \$ equivalent (in Millions)</b>						<b>174</b>	

## 5.7 Implementation of the Vision Plan

The key to success of the Vision Plan lies with the Implementing Agency for the India Foundry Mission (IFM), envisioned as a strong, stand alone, executing agency operating full-time on “Mission mode”. It will have full authority to represent, demonstrate the pilots and implement the various recommendations and professionally monitor the growth.

The IFM will have a predetermined lifespan of 5 years and will create and nurture exit vehicles to take on its responsibilities thereafter.

The existing BMO (IIF) will be represented in the governing body of the IFM



## 5.8 Total investment needed to bridge the demand-supply gap

The project has been planned in two phases of five years each.

Phase I consisting of majority of the interventions on selected clusters would serve to as stimulant to fill the demand –supply gap and also to support projects as demonstrations.

Phase II, consists of interventions planned or those carried forward from Phase I (especially related to achieving the operation excellence)

The total investment proposed under the project is Rs. 786<sup>10</sup> Crores and would generate further contribution of Rs. 1348 Crores. This investment would help industry to move towards a production level of ~11 MT. The initial investment from the project and the related investment generated within the sector shall result into multiplier effect and the production level would further increase depending upon the market dynamics.

<sup>10</sup> At 2011 price levels, establishing (green field) new capacity of 1 Million TPA would necessitate a capital injection of Rs 650 to 1000 Crores excluding the land cost which depends on location of the project. But the expansion & modernisation would range between Rs.250 - 500 Cr based on sophistication of automation sought.

## 5.9 Readiness of the sector for the change:

Any plan can succeed only if the parties involved are ready to take a plunge to go in for the necessary change and thereby growth.

The survey assessed the readiness of the units to go in for change by gauging from the reactions of the (1) owners /key person and (2) the current plans of the unit relating to expansion etc. The in-depth survey by itself helped to ensure the industry's buy-in for the interventions.

Over 70% of the units in L1 to L3 units and Over 85% of the L4 level units were enthusiastic about the possible changes that can be brought about by the proposed study and its interventions. This has strengthened the case on the acceptance of the proposed interventions.

## VI. Conclusion

6.1 This vision plan outlay of Rs 786 Crores as detailed in Graph 2 and would stimulate an additional investment of Rs 500 Crores by way of FDI and an additional Rs 848 Crores through local resources. Hence the sector would get a total investment of Rs 2134 Crores.

6.2 The proposed interventions would help the industry (as a natural corollary) to reach a level of ~11.5 MTPA in the following way:

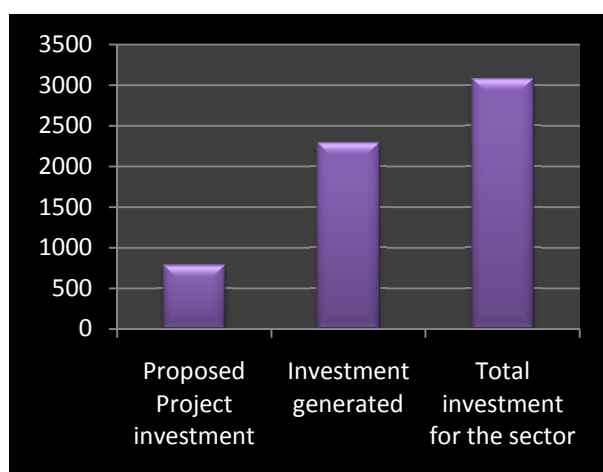
<u>Adopted route</u>	<u>Expected change and Increase in output</u>
By improving the operational efficiency in existing units by making marginal investments and corrective interventions	Output would increase by 25% in case of L0, L1 units and 20% in case of L2, L3 units. The impact on output due to this would be 0.66 MTPA
By going in for modernisation /mechanisation	160 benefitted units would contribute ~2 MTPA.
By going for newer units and FDI	10 new units would be established contributing ~1 MTPA
<b>Total increase</b>	<b>~4 million TPA</b>

6.3 The other major impacts on the sector based on the interventions is summarised below.

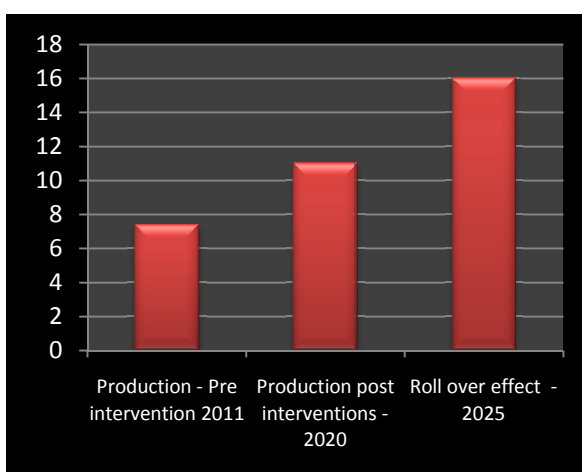
Impact Indicators	Likely impact		What it means to the sector and to the nation as a whole
	Direct thru intervention	Roll over effect possible	
<b>Production/output in the sector in Million TPA</b>	1.7	2.4 (Graph 3)	Output level of 11.5 Million TPA by 2020 through the proposed interventions. Market forces to carry the output levels further.
<b>Export earnings (US\$ 215 Bn - 2011 )</b>	US\$ 40 Billion	US\$ 50 Billion	The total export by 2020 is likely to touch US \$ 315 Billion.
<b>Energy saving methods adopted</b>	10% of the sector	20% of the sector	The sector will save on an average Rs 56 Crores per year by 2011.
	28 <sup>11</sup> Crores	56 Crores	

<sup>11</sup> Assuming a most conservative saving of 100 KWHr equivalent per Ton produced , at 4 Rs per unit ,on 10% of 7 Million tons = 100\*4\*10%\*7 millions

<b>Skill up-gradation of 1. Labour</b>	1050	1650	The sector will have the benefit of training 2700 skilled workers, 1000 technicians /engineers (existing personnel) 5000 new trained entrants at various levels. 8700 additional trained people v/s 2011 level. 200 trainers to further train the staff/workers.
<b>2. Engineers / Techies</b>	500	500	
<b>3. Trainers</b>	100	100	
<b>4. New professional entrants to industry</b>	2500	2500	
<b>No of professionals brought in</b>	80	40	120 new entrepreneurs for additional capacities in direct foundry or related areas of supply chain.
<b>Health care provided to workers</b>	5000	5000	10,000 permanent workers will have health care cover.
<b>Profitability of the sector</b>	Will go up to 5 to 7%	Upto 8 to 9%	The average profitability (from L0 – L5) will be closer to that of the user market i.e. at 8 to 9% from current declared level of 3-6 %
<b>Earnings to Government by way of Tax/levies</b>	Pro rata to output by Rs 1190 Crores PA	Additional revenue - Rs 1680 Cr. PA	Excise and VAT/CST component - Rs 7000 per Ton. Revenue of government by 2020 - Rs 2870 Cr.
<b>Consolidation of clusters</b>	20 new clusters consolidated	3 new clusters established	The sector will have in all 35 well established and recognised clusters versus current 12 clusters
<b>Likely additional business generated for capital goods</b>	Rs 1000 Crores of capital goods (all types of equipment)	Rs 1250 Crores of capital goods	The capital goods industry will benefit by sale of over Rs 2500 Crores in the 10 year period.



**Graph 2: Investment Model**



**Graph 3: MTPA Rollover Effect**