

RISK MANAGEMENT IN FOUNDRY INDUSTRY

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It is heartening to note the fact that, India occupies a place in the top ten casting producing nations in the world. India is the sixth largest casting producer in the world in tonnage and second largest in total number of foundries. It has 5000 foundries producing 3.24 MMTs castings annually worth of Rs.10, 000 crores. Bulk quantity of castings was produced by gray iron(74%), followed by steel castings (9.6%), ductile iron (8%) and aluminum castings (6.8%).

In India, foundry industry's capacity utilization is around 45-55%, average casting rejection rates are 7-8%, average productivity is around 12-20MT/man/year. Energy consumption for ferrous castings varies from 700-900KWh per MT on average.

According to a study by IIM, Bangalore of 37 countries on Global Entrepreneurial Monitor (GEM), the study reveals that India exhibits the most entrepreneurial energy next only to Thailand which stands first. The GEM Total Entrepreneurial Assessment (TEA) measure of this energy is 17.88 for India to stand second while it is 18.9 for Thailand. Then the question is—what is lacking or wrong with Indian Foundry Industry? The answer is, 'Risk Management'.

Global foundry industry consists of about 35000 numbers of foundries manufacturing approximately 90 Million Metric Tons of metal castings worth \$120 Billions and employing 2.0 millions employees directly. More than 90% of all manufactured goods and capital equipment use castings as engineered

components or rely on castings for their manufacture.

It is heartening to note the fact that, India occupies a place in the top ten casting producing nations in the world. India is the sixth largest casting producer in the world in tonnage and second largest in

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Nearly 99% of the proprietors profile is technocrats. Doing well in moldings/casting and producing. But a basic non-attended question lies with executives is, at what cost? That is, a risk involved in so many activities has not been identified, evaluated and managed. The simple reason due to which total costs of production of foundry products in China are equal to the raw material cost in India.

The prolonged demand recession in the domestic market for the foundry products, the liberalization, globalization, the opening up of the flood gates by WTO and the success stories of those who have ventured into export market already have finally broken the ice. Every one has started to realize that it is worth while and lucrative to be exporting to keep our business growing and sustainable in the long run. Exports lead to win-win situation. But for this, one needs to come up to international standards in terms of cost, quality, and efficiency.

Today, change in the reforms has paved way to an economy to move away from a planned economy to an efficient market economy. The foundry industry is not an exception to it.

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Issues

- What are the key risks of operating in an international market?
- How do we manage these risks?
- What are the capabilities we need to develop?
- What are the key initiatives we need to take?
- What solutions can we consider?

Risk Management: Is the logical development and execution of a plan to deal with potential losses. The focus of a risk management program is to manage an organization's exposure to accidental losses, and to protect its assets.

Pure Risk: It is not speculative in character and is involved in the organizations. The same can be effectively managed by systematic planning and control of business activities. Here, more focus should be on abnormal losses than normal.

Speculative Risk: Which is outside the business organization and businessmen control his/her risk of loss by hedging such activities of speculative in nature.

In fact foundry is an engine of engineering industry. A good growth and prosperity of foundry will certainly enable engineering and allied industries. But unfortunately foundrymen across the country are not able to concentrate on the various risk areas of their business due to which they have failed to come up to global standards and reap the market.

For Example: A single foundryman is not in a position to export, as his/her size of operation is very small or is not in a position to complete all the procedural aspects involved. One of the conditions imposed by the Government of India to foundry product export is minimum 3000 tons. In such a case, the best solution could be CLUSTER DEVELOPMENT through which these orders can be met and economies of large scale operations can be achieved.

In addition, few simple excuses they site are:

- i. They do not have a time and man power to do the same,

- ii. That is not the main object of their business,
- iii. Those do not cost them much,
- iv. Those are least important one,
- v. Time involved in the process of identification, evaluation and management of the same are high.

The overall risk of foundry industry can be classified as:

I Economy Risk

- i. Recession
- ii. Tariffs
- iii. Regulations

Recession has become a global phenomenon. Recession is one of the phases of a business cycle. During such a stage it is inevitable to reduce the costs. Fix the selling price of products without considering non-outflow of cash expenses. As there will be sluggishness in the demand for the products, without retrenchment/termination/layoff etc., entrepreneur needs to train employees for the future. Ultimately what is most needed is, restore market confidence; maintain financial markets stability; strengthen economic fundamentals; and continuance of equity and social-economic agendas.

II Organizational Risk

- i. Recruitment/Retention
- ii. Competence
- iii. Culture

Recruitment of right person for the right job is very much essential to build the industry competence and intellectual capital of an organization. It is not enough to recruit and leave them. Constant training, development of skill and creation of loyalty towards the organization is must. Today, if faced, the simple reason is Human Resource Management. In a competitive era one cannot manage by creating fear. What is most wanted is, positive insight into the business among employees, opportunity for creativity, share in the wealth generated by the business etc.,

III Process Risk

- i. Fraud
- ii. Security
- iii. Physical Losses

The sub issues of process risk are, do we have a robust supply chain management process and systems in place, to manage delivery and costs? Is there a cross-functional approach to supply chain management? Is their

visibility of information across the supply chain to manage inventory?

The strategies have to be management of production and productivity. All loss areas have to be effectively managed. To build the market-based costs and prices inventory management should be through Just- In-Time, ABC analysis, VED analysis; issue of materials should be in the light of LIFO or FIFO; and so on.

Rejection loss arising at production end and customer end also need to be controlled.

IV Operational Risk

- i. Supply
- ii. Scale of operation
- iii. Costs

The sub issues are;

- i. Do we have the capacity to supply global volumes?
- ii. Will we be able to meet commitments?
- iii. Can we manage our costs?

Table I
• (Cost of Sales of XYZ Foundry in Belgaum (Karnataka))

(fig. in lakhs)

| | 97 | 98 | 99 | 00 | 01 |
|-----------------------------|--------|--------|--------|--------|--------|
| Sales | 731.54 | 756.94 | 672.56 | 770.59 | 841.53 |
| Cost of sales | 647.89 | 686.47 | 629.67 | 717.18 | 779.18 |
| Cost of sales as % of sales | 88.56 | 90.69 | 93.62 | 93.12 | 92.59 |

The above table depicts that, over a period of five years the cost of sales has increased from 88.56% in 1997 to 92.59% in 2001. Here, it can be noticed that the scale of operations improvement is very poor. Another reason could be Productivity level- which is 15 in India as compared to 70 at global level. This needs to be attended.

Today, in the midst of increased power charges, the cost of power and manufacturing expenses have substantially increased in place of fuel cost earlier. But unfortunately it is few people who have initiated the necessary steps to generate their own power. Therefore, a strong movement is needed among Indian foundrymen to develop cluster, to mitigate huge cost of power.

Indian Foundry Industry Cost Structure*

| | |
|------------------|-----|
| Raw Material | 50% |
| Manufacturing | 16% |
| Employee | 09% |
| Selling | 05% |
| Administrative | 05% |
| Operating Margin | 15% |

* Foundry Sector-The unrealized dream, Hindu Business Line, 26th March 2003

V Product Risk

- i. Quality
- ii. Specifications
- iii. Standards

Acquisition of infrastructure as per the customers' specifications and post product sales service has become the essence of the day, more specifically, there has not remained something-called standard product, and regular change in the design, as per customer requirement has become the order of foundry business but there is no escape to foundrymen from this. He needs to produce on the basis of customers order and invest in R&D activities for further development of quality and standards. Otherwise he will endanger into losses.

Quality too is an important and unique aspect of businesses today, and there is no such insurance company under the globe that insures and extends an assurance about product quality liability. Therefore, one need not only be alert as far as quality is concerned, but also competitive in managing the quality.

VI Customer Risk

- i. Acquisition
- ii. Retention
- iii. Service

It just cost one rupee to lose a customer but requires/warrants worth sixty rupees effort to retain the customer. Creation and retention of customer is a continuous exercise. To retain a customer, foundrymen may be forced to render number of post deal service and such services may not generate any revenue and in turn may cost. Therefore, one needs to be quality conscious and adhere to all the standards specified by the customer.

VII Political Risk

- i. Fraud
- ii. Data Security
- iii. Loss

Foundries are also subject to intentional frauds by politicians/ political parties. Who discriminatory levy taxes and endanger the foundries into losses. Truck owner strike blocking the raw material or finished product may force/ invite industrialist to incur out-of-pocket cost, which is an additional cost and turns to be a loss. Therefore, collectively they should ask vendors to establish the depots close to their operations. This not only reduces the above mentioned likely losses but also reduces the inventory holdings and maintenance costs.

VIII Physical Risk

- i. Theft
- ii. Damage
- iii. Natural disaster

Risk of losses are also found in foundries due to natural disasters, such as, lightning, earth quake etc. Since costly equipment, technology are used in the foundries insurance coverage is very much essential, otherwise have to bear huge losses.

IX Strategy Risk

- i. Product mix
- ii. Market segmentation

Many a time businesses have failed due to wrong product mix or not able to address the right segment of market. Product may be good and doing well in the market but contribution from such product may be marginal or negligible. That is, something in- sufficient to cover the fixed cost. Therefore, products having better contribution margin should be focused than otherwise.

X Market Risk

- i. Currency fluctuation
- ii. Interest rate fluctuation
- iii. Commodity prices

Table II
Interest rate of ABC Foundry
in Belgaum (Karnataka)

| | |
|------|---------------------------|
| 1997 | 33.67/188.76*100 = 17.83% |
| 1998 | 37.31/190.41*100 = 19.59% |
| 1999 | 32.31/172.04*100 = 18.78% |
| 2000 | 34.73/168.76*100 = 20.57% |
| 2001 | 32.99/158.55*100 = 20.81% |

Businesses also need to borrow a sizable amount of borrowings. Such borrowings should not take out a bigger slot of profit. This is possible through optimum investment in inventory and optimum holding of debtors. Investment in Work-in-Progress also has to be restricted. It is alarming to notice from the Table II that, inspite of decreasing interest rates in the country, cost of borrowing has gone up in ABC Foundry Belgaum the same should not be allowed.

When dealt in the international market, periodic change in the exchange rate is another area where foundries are facing the problem. Here, hedging of exchange rate is essential.

XI Credit Risk

- i. Default
- ii. Collections
- iii. Credit terms

Table III

Debtors turnover in AB Found-ries Pvt.Ltd., Belgaum(Karnataka)

| | 1997 | 1998 | 1999 | 2000 | 2001 |
|------|------|------|------|------|------|
| Days | 63 | 86 | 111 | 84 | 78 |

Although AB Foundries Pvt. Ltd., Belgaum has a credit policy of 60 days, the outstanding debtors have crossed. This kind ineffectiveness in management of debtors' warrant firms to borrow more than the standard requirement for working capital and increase the financial cost.

XII Technology Risk

- i. Recession
- ii. Obsolescence
- iii. Up-gradation

Use of latest technology, modernization of units is very slow in foundry industry. This has really pushed-up the cost of production in foundry industry when compared to foundries in other countries. As a result of which cost of maintenance, defectives, rejection and quality is too

high. Therefore, use of CNC, CAD/CAM, Anysis, FEA are very much essential to withstand to, an international standards.

Hence, "Identification, Evaluation and Management of Risk in Foundry Industry" is not only beneficial to foundry industry in specific but all the engineering and allied industries in general.

STRATEGIES TO MANAGE RISK

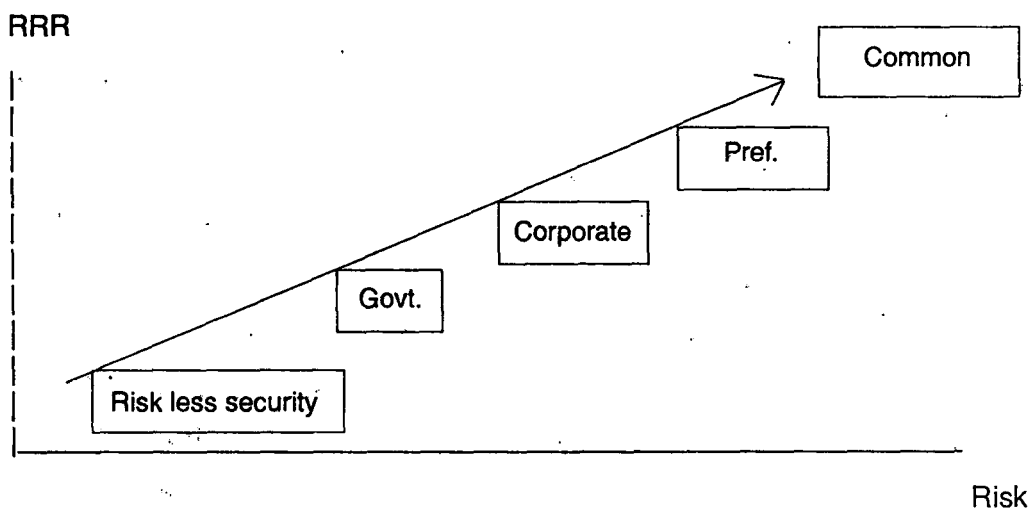
- i. Reduction in metal holding time before pouring into the moulds from the furnace and the ladle. This may make it possible to decrease the super heat requirement.
- ii. Removal of rust, sands and oil stain on charged scrap. Presence of these increases slag formation.
- iii. Reduction in the capital employment to hold only operating capital.
- iv. Optimum capital mix to reduce the overall cost of capital of organization.
- v. It is found that the major consumption of electrical energy is for melting operation in a foundry.
- vi. Develop new products and remove non-moving /poor performing ones to keep Portfolio updated.

| | Product A Rs | Product B Rs | Product C Rs | Total Rs |
|----------------|-----------------|-----------------|-----------------|-------------|
| Materials | 48,000 | 37,000 | 65,000 | 1,50,000 |
| Wges | 15,000 | 25,000 | 30,000 | 70,000 |
| Other expenses | 15,000 | 18,000 | 17,000 | 50,000 |
| Total cost | 78,000 | 80,000 | 1,12,000 | 2,70,000 |
| Sales | 1,02,400 | 1,08,000 | 89,600 | 3,00,000 |
| Profit | 24,400 | 28,000 | (-) 22,400 | 30,000 |
| Profit(%) | 24 | 26 | — | 10 |

This statement clearly reveals to management that products A & B are obtaining approximately 25% profit but the product C is pulling down the total profit to 10%. Thus management may investigate thoroughly product C to find out possible economies or stop production of C or increase selling price of C or produce C as a loss leader, i.e.,

produce and sell C in the hope of encouraging consumers also to buy A & B provided there are no changes in plant capacity, plant utilization volume of sales, etc.

Use best mix of Capital. That is, the mix which reduces the overall cost of capital and increases the value of the firm.



Risk – return relationships of different securities

- viii. Focus on Cost-Volume-Profit analysis, It helps businesses to know answers to the following questions:
- How do costs behave in relation to volume?
 - At what sales volume would the firm break even?
 - How sensitive is profit to variations in output?
 - What would be the effect of a projected sales volume on profit?
 - How much should the firm produce and sell in order to reach a target profit level?

ix. Focus on Intellectual Capital Components & Parameters:

| Components of IC | Effects | Parameter |
|----------------------|--|-------------------------------|
| Human Capital | <ul style="list-style-type: none"> ✓Improves loyalty ✓Improves efficiency ✓New ideas in practice | Earnings and Pay to Employees |
| Process Capital | <ul style="list-style-type: none"> ✓Reduction in Material Consumption ✓Low inventories ✓Low cost of production | Materials consumed |
| Relationship Capital | <ul style="list-style-type: none"> ✓Efficient administration ✓Better collection ✓Spontaneous credit ✓Increased market share | Administrative Expenses |
| Innovation Capital | <ul style="list-style-type: none"> ✓Reduction in Manuf. Expenses ✓Better capital mix ✓Improves Research and Development activities ✓Improves Quality | Manufacturing Expenses |
| Commitment Capital | <ul style="list-style-type: none"> ✓Improves service to Society ✓Management acts like customer ✓Builds organisational image | Donation etc. |

x. Make the foundry more knowledge intensive.

Example:

| Company | Market value (M) | Book value (B) | M/B |
|-----------------------------------|-------------------|------------------|-------|
| IBM | \$70.7 billion | \$16.6 billion | 4.25 |
| Microsoft | \$85.5 billion | \$930 million | 91.93 |
| Polyhydron Pvt . Ltd., Belgaum | Rs. 1719.75 lakhs | Rs. 749.90 lakhs | 2.29 |

That is, in reality a firm's intellectual capital "value" is totally dependent on what the firms' business context (its economic, industrial, and internal situation). IC is growing as the major part of investments in modern economy. Such as, knowledge, R & D, IT and entertainment.

Now, this kind of new initiation in measuring, reporting and further enhancement requires the below prerequisites as far as Indian foundrymen are concerned:

- (1) Formally define the role of knowledge in your business and in your industry.
- (2) Divide your intellectual capital into strategic areas.
- (3) Develop a measurement system to assist in benchmarking reports.
- (4) Initiate knowledge sharing exercise.
- (5) Communicate best practices.
- (6) Establish formula for incentive & package schemes rather than negotiations.

At the same time, the most important & valuable dimension of IC reporting is to capture the traditionally invisible roots and evolve the new innovative roots for further earnings and have courage to communicate internally as well as externally in public.

- xi. Develop cross-functional processes.
- xii. Explore outsourcing opportunities to increase flexibility and capacity.
- xiii. Improve planning and scheduling—move from 'push' to 'pull' based planning.
- xiv. Invest in implementing globally accepted quality systems and standards (QS, TS 16949)
- xv. Use global benchmarks for improving quality in key areas.
- xvi. Develop product development capabilities to match customer requirements through streamlined processes and systems.
- xvii. Analyze segment wise growth and trends.

- xviii. Analyze own performance and profitability in different segments.
- xix. Leverage industry associations and technology/business alliances for market development
- xx. Invest in R&D capability and encourage a culture of innovation.
- xxi. Develop industry-academia interaction and collaboration to promote technology development.
- xxii. Leverage technology alliances.

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