

# REFRACTORY COATING START-UP AND COMMERCIALISATION PLAN FOR INDIAN STEEL FOUNDRIES WITH CHHATTISGARH IN CONTEXT

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## ABSTRACT

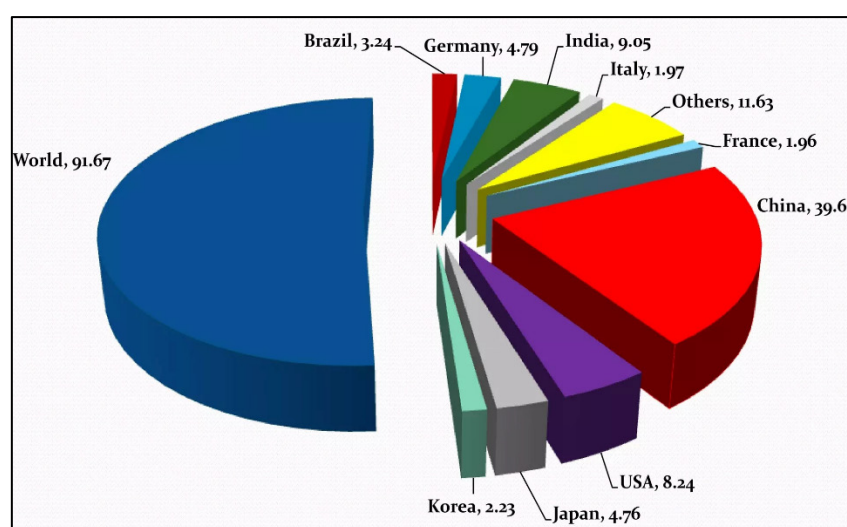
For the production of economical and quality steel castings in foundries, an appropriate refractory coating is of utmost significance for better surface finish of casting. Different types of coatings as per the casting type and design are used in large quantities in foundries all over India. So, a micro start-up producing and supplying foundry coatings is inevitable and gives a huge scope and promise for future entrepreneurship. The Government of India has taken many initiatives to support Micro, Small, and Medium Enterprises (MSMEs), including financial aid (e.g.- CGSTME non-collateral loan -upto one crore for Micro Start-ups), market development, skill development and capacity building. But, inspite of government initiatives / policies and positive investor sentiments, a start-up in India is quite often failing due to lack of proper commercialisation planning and long-term sustainable goals. Micro level businesses are privately owned enterprises with limited workforce and revenue. They are known for their flexibility and ability to adapt to market changes.

Nevertheless, they face challenges such as financial constraints, competition, limited bargaining power, regulatory complexities, and technological advancements. Notwithstanding these struggles, micro businesses contribute to the economy and local communities with their resilience, innovation, and community connections. But to achieve sustainability, a proper business plan, vision for future, Market analysis with SWOT study, Sales strategy with sales funnel forecasting, optimal PPC (Production Planning & Control) with adherence to licenses/rules of land, has to be achieved. This study aims to explore the market of foundry refractory coatings in Chhattisgarh, India, highlighting the significant impact of both the vast opportunities and vulnerable challenges in their growth.

**Keywords:** Foundries, Steel Castings, Start-Up, Foundry Coating, Micro Business.

## INTRODUCTION

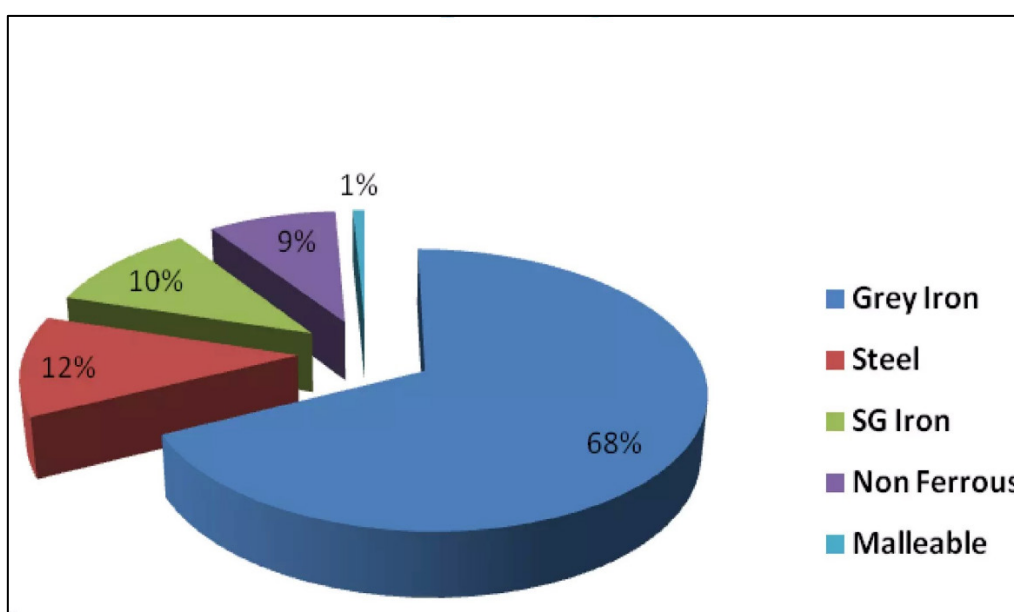
The Indian foundry market for ferrous castings is predicted to reach 31.77 USD by 2029, growing at a compound annual growth rate (CAGR) of 10.30% from its 2024 level of USD 19.46 billion. (Mordorintelligence.com/industry-reports/india-foundry-market/market-share, 2023)<sup>[8]</sup>. With an annual production of nearly 11 million metric tons, India ranks second in the world for castings production (*Graph 1*)(Foundrymen, 2024)<sup>[2]</sup>. For achieving maximum production and longer production runs with minimum fettling time, high performance refractory coatings that can tolerate higher castings temperature are becoming more and more popular in foundry sector(Lehumhus, 2024). Several tons of refractory coatings for each foundry per month are used in production of castings to improve the resistance to metal penetration, optimize surface finish of castings, and minimize flaws such as erosion, metal penetration, and veining(Milanova, 2023)<sup>[7]</sup>.



Graph 1 : Share of Major Casting producing Countries-Directory: IIF- 11<sup>th</sup> Edition

## LITERATURE REVIEW

As per the Indian Foundry directory – 11th edition, 2022-23 published by “The Institute of Indian Foundrymen”<sup>[2]</sup>, there are roughly working 1387 grey iron / S.G. iron foundries and 694 steel foundries under MSME & Large-scale enterprises, working in India in the year 2023. The distribution in terms of tonnage production is shown in *Graph 2*. Also, as per the directory, there are around 85 working foundries in Chhattisgarh procuring foundry paints in a huge scale such as M/s Simplex castings Ltd., Bhilai, Bhilai Engineering Corporation Ltd., Bhilai, Vossloh Beekay Castings Ltd. Bhilai, Jindal Steel and Power Ltd. Raipur, Texmaco Rail & Engineering. Ltd. Urla, Nutan Ispat & Power Ltd. Raipur, Rotocast Industries Ltd. Raipur, Satguru Castings, Bilaspur etc. to name a few.



*Graph 2 : Product mix of cast-Metal-India-Directory: IIF- 11th Edition*

Environmental laws and the need for increased worker safety are driving up demand for water-based foundry coatings against the solvent-based foundry coatings all over the world. However, it depends more on the sand binder system used for the casting. The demand for Zircon based coatings is enormous for all types of castings including grey iron castings, S.G. Iron or ductile castings and mild steel/alloy steel/ stainless steel castings. So, based on the above data, a micro or small-scale industry for manufacturing foundry coatings can be established as a start-up in Chhattisgarh state with cheap labour and easily available electricity. But, sustainability of a start-up business is a dynamic area that has drawn significant scholarly and political interest during the 1990s and has been more widely recognized in the public mind (Martins et

al., 2022)<sup>[5]</sup>. The challenge here is to compete with multinational companies both in terms of quality and economics.

Concerns over sustainable development have altered the corporate environment and become important factors in determining a company's ability to succeed(Stovall, 2018). Better performance of start-up small firms is a result of the entrepreneurial traits held by its owners, efficient management techniques, particularly in the areas of marketing, operations, and finance(Yaacob et al., 2014)<sup>[11]</sup>. The potential of MSMEs having a substantial impact on the attainment of several sustainable expansion areas is far greater than their actual size. Particularly in emerging markets and local communities, small-scale industries(MSMEs) displays a major part in job generation(Kassegn, 2022)<sup>[3]</sup>.

A poorly-thought-out business plan is present in 82% of failed companies(Yaacob et al., 2014)<sup>[11]</sup>. So, a thorough business strategy or a comprehensive business plan increases a small company's chances of success by sixteen percent(Mazzarol et al., 1999)<sup>[6]</sup>. A start-up summary business plan comprises, among other things, a description of your goods and services, your company's organizational structure, a target market analysis, a marketing plan, capital requirements, financial predictions, licensing requirements and scope for future. It functions as a commercial road map. A business plan assists you in evaluating your idea objectively and determining whether it is truly worthwhile to pursue(Watson et al., 1998)<sup>[10]</sup>. It also explains the potential problems and solutions for your start-up business in the future. Businesses are grown by 72% of entrepreneurs with a business strategy(Beaver, 2003)<sup>[1]</sup>.

## **METHODOLOGY & DISCUSSIONS**

### **Start-up Business Plan**

Here is an outline for a business plan for a start-up company with respect to producing and selling foundry coatings as in illustrated in this present paper (*Figure 1*)

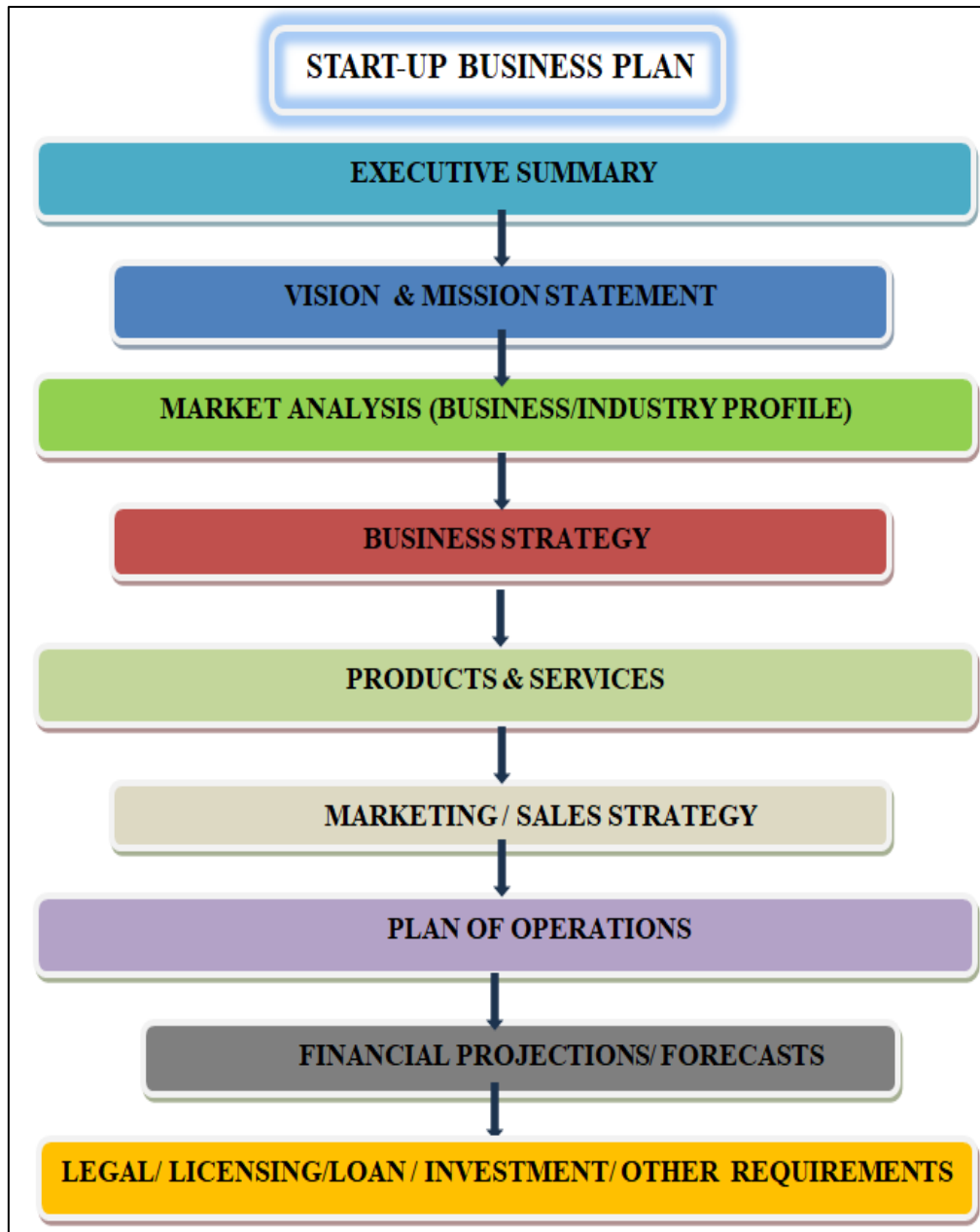


Figure 1 : Outline for Start-up Business Plan

### **Executive Summary**

- (a). **Problem Statement** – In recent customer surveys or customer feedback sessions, most of the customers have demanded cheaper alternatives to Zircon coatings without any compromise in surface finish quality of castings. They are ready to experiment on case-to-case basis, as the requirement of Zircon coatings is huge and they are under serious pressure to produce castings in a cheaper way by lowering the input costs. The ever-increasing price of zircon flour is disheartening and a solution is to be found to sustain the competitive market.

- (b). **Proposed Solution** – Refractories individually or ball milled mixture of refractories, other than Zircon has to be checked property wise and compared with Zircon's property. The aim here is to match Zircon's properties to some extent so that the other blend can match Zircon's performance. Lab trials to be initiated to get results close to that of Zircon coatings and must be followed by trials on different size castings on step-by-step basis. Every raw material for coatings will be rigorously quality controlled so as to get accurate results of coatings.
- (c). **Value** – With new coatings that can be between 30-40% cheaper than zircon coatings, it will be expected to be able to break into newer and older markets of medium/small size castings, while still supporting the very critical heavy castings with zircon coatings with consecutive trials of zircon plus new coatings mix to make it more economical. Early customer feedback indicates that the option of cheaper coatings will not affect the brands image and a symbiotic relation will develop to fight this competitive market.

### ***Vision and Mission Statement***

The vision of creating cost-effective, performance-focused coatings to take the place of zircon coatings was to support foundries in surviving a highly competitive market and establish a reputation for producing goods that solve customers' concerns.

### **Vision statement**

**“There is no such problem without gifts for you in its hands,**

**We seek problems because we need their gifts”**

In addition to helping us enter a new market, more affordable and diverse coatings will positively impact our brand's growth. With the attention that these new coatings are receiving and the projected need for cost-effective performance-oriented coatings, we anticipate seeing a 3% yearly growth in our market share.

### ***Market Analysis***

A market analysis informs us about your competitors and probable clients.

The market analysis's central essentials are:

- a) **Industry analysis** - Analyses the complete business environment in which we are competing,
- b) **Target Market analysis** -Analyses your target market to determine and measure the clients you want to reach for sales.
- c) **Competitive analysis** - Analysing competitors: finds your rivals and evaluates their advantages and disadvantages,

- d) **SWOT analysis** (Strengths, Weaknesses, Opportunities, Threats) - A SWOT analysis is a technique for strategic forecasting that helps to recognize and comprehend the opportunities, threats, weaknesses, and strengths that a company or sector faces. An illustration of a SWOT analysis customized for a micro-scale industry for foundry coatings may be found here: -

### **Strengths**

1. Small-scale enterprises translate into low operational costs.
2. The capacity to quickly adjust to shifts in the market and client preferences.
3. Strong client relationships and individualized customer service.
4. Quickness in making choices and putting new concepts into practice.
5. A strong emphasis on specialization and specialized markets,
6. Registration under MSME scheme guarantees payment within 45 days.

### **Weaknesses**

1. Limited funds and resources available for development and expansion.
2. Susceptibility to market and economic volatility.
3. A small marketing budget and little brand awareness.
4. Reliance on a small team, which may result in capacity issues and burnout.
5. Because of the tiny scale, there is little negotiating power with distributors and suppliers.

### **Opportunities**

1. The need for specialist products and services is growing.
2. Expansion into unexplored markets or new regions.
3. Strategic partnerships to collaborate or distribute with larger companies.
4. Using technology to boost productivity and cut expenses.
5. Providing a greater selection of products and services to accommodate customer's changing needs.

### **Threats**

1. Vigorous competition from more resource-rich and larger multi-national rivals.
2. Modifications to regulations that affect the sector.
3. The impact of unstable economies on consumer expenditure.
4. Quick advances in technology cause present products to become outdated.
5. Disruptions to the supply chain and variations in the cost of raw materials.

A micro-scale business can absorb a great deal about its peripheral opportunities and threats as well as its core assets and weaknesses by performing a swot analysis. In



directive to accomplish justifiable growth and success, plans to address weaknesses, maximize on strengths, take advantage of opportunities, and manage dangers can be developed with the aid of this study.

### **Business Strategy**

Business strategy is an establishment's long-standing aims and plan aimed at accomplishing them or the progression the business will follow to realize its purposes. Price, value, delivery, technology, and intellectual property (IP) are the only five business policies. It is simpler to implement a single strategy, but mixing many strategies raises the possibility of failure. While a corporation must still perform in every area, its key competencies are found at the strategic apex. By facilitating low costs and a steady gain in market share, the low-cost strategy guarantees an unchallenged position in the market. It necessitates a focused attention on internal execution and cost reduction. On the other hand, businesses who use this tactic could neglect marketing and grow complacent, leaving them open to attack by rivals who have better technology. Technology strategies have the ability to render low-cost enterprises obsolete. The quality approach prioritizes internal execution, particularly in the areas of marketing, supplier collaboration, and manufacturing. Japanese and German businesses thrive in this field because it demands strong work ethics and a long tradition of excellence. But a lack of attention to quality can result from cultural changes. Developing a robust distribution network is a key component of distribution strategy, which can raise entry barriers but is expensive to set up. Technology strategy involves constant innovation and internal production to create an unstoppable product by combining state-of-the-art technology and manufacturing. The IP strategy is based on intellectual property rather than production, which makes it popular among tiny start-ups but susceptible to imitation in the electronics sector. For the coatings start-up to succeed all the first four strategies must be implemented in equal measures and the objective of supplying economical yet efficient coatings must be achieved.

### **Products/Services**

The simplest definition of a product is something that is created, stored, promoted, transported, and ultimately sold while a service is an intangible that is the result of the labour of one or more people. One important thing to remember is that services and products are tightly related. In actuality, most items include some sort of service component. Foundry coatings as a product is tangible, perishable having an expiry date of 6 months and perishes completely after application when liquid metal is poured in moulds for castings, heterogeneous and variable as per the type of casting /sand system. The services associated with it are transportation and after sales service.



## Marketing/Sales Strategy

A firm's predominant plan to enable the purchase and sale of its goods and services is said to be its marketing strategy. It is the superlative way to attach with probable customers and triumph them over. It includes sophisticated evidence on target customer region wise, the business's cost proposal, and significant brand image. Understanding the requirements and desires of its customers is vital in evolving and collaborating a permanent competitive superiority over competing trades.

Formulation of a Marketing Strategy in a few steps–

- a) **Set your objectives:** Though all business desires to make huge sales, we should also have more instantaneous purposes like structuring authority, increasing consumer rendezvous, or producing leads. These modest objectives give us an idea how your marketing is establishing itself among customers.
- b) **Distinguish your clients:** Any ferrous foundry is an ideal client for refractory coatings and awareness of them and their uses will bring good results. Identify the foundries in which refractory coating will be useful and find the platform at which all the foundries come together. This is your target audience and here you should aim to pitch your credentials to be the best supplier.
- c) **Establish your budget:** You can distribute small samples of coatings as per your budget as free samples. Define your marketing budget monthly for marketing purposes such as advertisement, sales promotion, distributing technical data sheets etc., so that the limitations can be known and worked accordingly.
- d) **Choose your channels wisely:** Choosing correct platform for marketing is one of the most crucial elements in pitching your ideas to the potential customers. Forums such as Indian Institute of Foundrymen are the right channel for marketing foundry coatings through advertisement and contact building.
- e) **Calculate your level of success:** Not only sales but your popularity as a technical brand among foundries will assess the effectiveness of your marketing campaigns and efforts.

As you advance your marketing strategy, you should emphasis on 7 P's of marketing-

- a) **Product** – Without customer survey, developing a product is a wrong idea as it may fail if the customer cannot attach any importance to it. The best approach is to identify the problem faced by the customer and then developing a product to address the problem. A happy and satisfied customer will bring success to your company for a long time to come.

- b) **Price** –Value of a product depends on the customer's capacity and inclination to pay a certain price on it. Micro firms with less overhead, better point to point care and value-added products/services can be more competitive in pricing than larger MNC firms. It is utmost perilous to analyse your product's pricing from the perspective of the customer but with optimal profit in mind.
- c) **Promotion**- By promotion a business can tell its probable consumers its competencies and the products it sells. It will cover advertisement, long term branding, social media presence, PR, sales management, retail discounts etc. Promotions need to bring in customers with value added products underlying the advantages of the product, for the purchaser to buy against the competitors product.
- d) **Place** –The product must be available at the appropriate period, place, and quantity while conserving optimal costs for circulation, inventory, and storage. Clients must easily find them online in user friendly e-commerce platforms or offline in multiple stores conveniently.
- e) **People** – The behaviour of each front desk employee with the customers must be cordial understanding and empathizing the problems faced by the customer. Proper training must be given to the employees to handle tough customers cordially without harming the reputation of the company.
- f) **Packaging/ Physical evidence**- Permanence of our product also depends how we present our product to the customer. Presentation and packaging of your product builds your brand value. The consumer associates your products quality with better packaging and are significantly certain to use it.
- g) **Process** –At present, a lot of clients capitalizes in an all-inclusive experience that begins the instant they start displaying interest in your business and continues even after the purchase. So, the method in which the coating is delivered and the conduct of employees plays a critical role in ensuring that the client is satisfied and forth coming.

### ***Sales Funnel***

Building a sales funnel, which depicts the fictitious path a potential customer travels from stranger to customer, is crucial for a start-up industry. A sales funnel starts with a big number of leads and prospects and narrows them down to a smaller number of clienteles near the bottom.

The direction that probable clients take from seeking to purchasing is apprehended and described by a sales funnel, a phrase used in marketing. A sales funnel has multiple processes; the precise number of steps depends on the sales model of each organization. Businesses may guide potential consumers through the purchasing process and towards completion by creating sales funnels that are well-built and free

of holes. Conversely, those gapped funnels will cause prospective clients to exit the sales process, much like water passing through a sieve. Marketers can learn more about a customer's purchasing journey and the stage at which they are in it by using a sales funnel. Which marketing initiatives and platforms will best encourage a customer to make a purchase can be determined using these insights. A sales funnel is a concept used in marketing that helps to enhance conversions by allowing marketers to customise and optimise their messaging and actions.

The following steps in Sales Funnel formation are followed for the start-up industry in hand –

- a) Prospect/Awareness – The potential customer sees your company or what you're offering,
- b) Contact/Interest – They choose to learn more about you, and a curiosity grows,
- c) Evaluation/Initial Visit- They look into the legitimacy of your company and schedule a first appointment for an initial visit,
- d) Opportunity/Trial – They place a trial order and choose to engage with you on a small scale,
- e) Client/Adoption – Finally, they choose to become clients.

### **Operations Strategy & PPC (Production planning & control)**

For a start-up business, an operational plan is a simple written document that lists the foremost aims and objectives of an organization together with a strategy for accomplishing them (*Figure 2*). Operational Strategy clearly summarises the short-term and long-term goals so that all the team participants know exactly to perform the duties accordingly. Generating an operational plan helps teams make perilous decisions on the long-term strategy of the business and keeps it in right direction.

When generating an operation strategy for the micro company, it is to be seen that the operational and strategic plans must be in agreement. Here are seven steps to creating an operational plan based on that idea -

- a. Setting up corporate work flowcharts and processes that can give quality output continuously and followed diligently,
- b. Establishing operational goals to achieve in a timely manner with the main strategic planning in mind,
- c. Determination of the main tasks of hiring efficient people to accomplish the main objectives,
- d. Identifying and recruiting the suppliers, resources and build up a proper supply chain of suppliers to fulfil the orders,

- e. Setting deadlines for all the tasks which are essential for the proper running of the organisation,
- f. Mitigating all the risks involved step by step to build up an automatic system of production and supply,
- g. Observing performance of all the processes involved and continuous assessment for improvement is very essential to reach the operational goals of smooth business.



*Figure 2 : Operations Strategy Flow Chart for a start-up business*

## **Production Planning and Control**

A successful manufacturing process depends on effective production planning and control. It's the procedure for overseeing the labour force, schedules, resources, and other elements of creating goods and services. Businesses adopt production planning and control to fortify their manufacturing process and shield regular operations from disruptions.

Production planning and control emphasis on the best possible use of productivity time and production processes along with labour, raw materials etc. to assure quality each and every time. Predetermined standard of quality and quantity in all the output should be maintained consistently by using tools of production planning and control. PPC improves material procurement and lower production costs.

In the planning stage of procurement, accurate material sourcing and allocation can be achieved by proper timely communication with all the suppliers and other third-party merchants. Advance determination of errors in production can ensure consistent production without any failures. Deadlines in production can be met easily with

increased time control and production transparency. Efficiency in the use of all resources will enhance production cycles with increased profitability of the business.

Production costs and overheads will be minimum when the resources are properly utilised for the production of standard products. It reduces resource waste by using effective production planning and management to keep inventories at appropriate levels. When team members and production managers adhere to a set procedure, it becomes simpler to find inefficiencies, avoid delays in production, and find additional growth prospects.

### **Financial Projections and Forecasts**

One of the most important components of any new firm is a business plan. Our first two years' worth of financial estimates should be one of its primary components.

They give us estimates of our income, incoming cash, outgoing cash & finally the balance sheet. These projections give a written document to bankers & investors emphasising our financial management, confidence to repay loans and business expansion. Financial projections identify our urgent financial needs, important expenses, cash flow and in the process helps us with products price optimization and production planning.

Forecasting of future income and expenses can be done using the current financial data. Profitability index can be matched with increased sales or decreased operating costs by analysing the financial reports borne out of financial projections.

The following financial projections are compulsory for a start-up business

#### **a. Estimate your revenues and spending**

A list of all the major investments which we will require to unveil this business and our recurring operating expenses while working must be estimated. Asset purchases such as machinery, land, building, vehicles etc. and regular expenses like sales promotion, rent, electric bill, conveyance etc. must be accounted properly. A sales forecast, expected monthly revenues along with expenses should be made using financial projections. A detailed analysis of the conceived market can help in determining reasonable statistics.

#### **b. Make budgetary estimates**

Cash flow forecast for the 1<sup>st</sup> year of business can be obtained by the expenses and sales we make in the year. For the 2<sup>nd</sup> year, projections can be done quarterly or annually to understand the cash flow appropriately and steps to be taken for corrections if required. Sales on credit basis should only be taken as cash based on

customers pay reputation and our consistent performance. Yearly, Balance sheet. Trial balance & Profit-Loss accounts must be made and predicted for the corresponding year based on previous data. These reported forecasts will support in making budgetary provisions for future.

**c. Establish your budgetary requirements**

These financial forecasts will assist us in defining the feasibility of our business plans, any breaches that may exist, and likely money necessities. Moreover, these documents are essential for getting term loans, working capital loans and over-draft loans in banks or any financial institution.

**d. Plan using the projections**

Including different scenarios for each projection—optimistic, pessimistic, and most likely—can help us forestall the financial effects individually. For a new start-up, with these individual projections in hand, a practical approach to execute the business plan can form. The effects of price revision, faster production with improved machinery and faster payment recovery. on our finances must be taken into account and decisions to be made accordingly.

**e. Make backup plans**

Contingencies can always happen in business, disturbing all our forecasts. So, start-up business should always have a backup plan ready for all types of contingencies.

Also, it is wise to keep some cash in hand as a backup. Start-up business should always think to keep quarterly worth of working capital either as a bank reserve or any other available credit.

**f. Keep an eye on/ Monitor**

For any business to run smoothly, consistent financial vigilance is of utmost importance. Comparisons between forecasts and actual performance should be made to assess the progress of business. If it seems that the business is going out of track, then rectifications should be made immediately. Monitoring permits us to become acquainted with the cash flow cycle of our business and recognize looming deficits early on, when they are naturally easier to resolve.

**Legal/Licensing/Loan/Investments/Other requirements**

For the start-up business to start

**The following legal documents are required on case-to-case basis such as**

- A. Proprietorship/ Partnership agreement/ Articles of association (for Company),
- B. Legal document of Land/shop on lease /Rent or Ownership for address proof,

- C. PAN Card of the business,
- D. Tax Identification Number (TIN),
- E. Goods and Services Taxpayer Identification Number (GSTIN),
- F. Bank Account (Current/Cash-Credit etc. based on bank loan),
- G. MSME (Ministry of Micro, Small and Medium Enterprises) Registration/ Udyam Registration.
- H. Factory and Labour insurance.

**The following licenses will be required on case-to-case basis**

- A. Factory License,
- B. Environmental Pollution License,
- C. PESO (Petroleum and Explosive Safety Organisation of India) License,
- D. Electricity installation License with marked HP consumption requirement,

As per the financial projections of fund requirement for starting and running the start-up business, one can take unsecured loans from financial institutions/management or Term loan for land/building/ machinery and working capital loans from banks. MSME loans are also available to MSME units.

## RESULTS

### SWOT Analysis

Strengths	Weaknesses	Opportunities	Threat
Flexibility to adapt as per castings size	Limited resources/manpower	Growing demand for coatings	Vigorous competition from larger multinational rivals like Foseco, Gargi etc.
Innovative product offerings like ceramic paints	Lack of market presence and goodwill	Government support for MSMEs	Quick advances in technology
Strong local foundry networks & less overhead costs	Bureaucratic challenges	Expansion possibilities into new markets	Supply chain disruptions

*Table 1 : SWOT Table for Start-up in foundry coating business*

In *Table 1*, the SWOT analysis highlights critical internal strengths and weaknesses along with external opportunities and threats faced by refractory coating businesses in Chhattisgarh. There is a huge opportunity in this sector but the weakness of goodwill



must be overcome by constant quality supply. Local company gives an advantage of better networking along with best service,

### Sales Funnel

Table 2 depicts an example of Sales funnel chart for a start-up foundry coating business in Chhattisgarh, where as per the survey, there are 85 potential foundries who are purchasing bulk coatings every month for their castings. Out of which practically only 18 clients started business while 35 trials could be done. Out of the 18 clients, prominent ones are M/s Bhilai Engineering Co. Ltd., M/s Vossloh Beekay Castings Ltd., M/s Simplex castings Ltd., M/s Jindal Power & Steels Ltd., Mandirahasaud etc.

STEPS	NO. OF FOUNDRIES (C.G.)
PROSPECT/AWARENESS	85
CONTACT/INTEREST	70
INITIAL VISIT/ EVALUATION	55
PPURTUNITY/TRIAL	35
CLIENT/ADOPTION	18

Table 2 : Sales Funnel chart for start-up industry of foundry coatings in Chhattisgarh

All the other data is practically viable and targeted for the first-year sales and consequently the sales funnel is drawn (Figure 3).

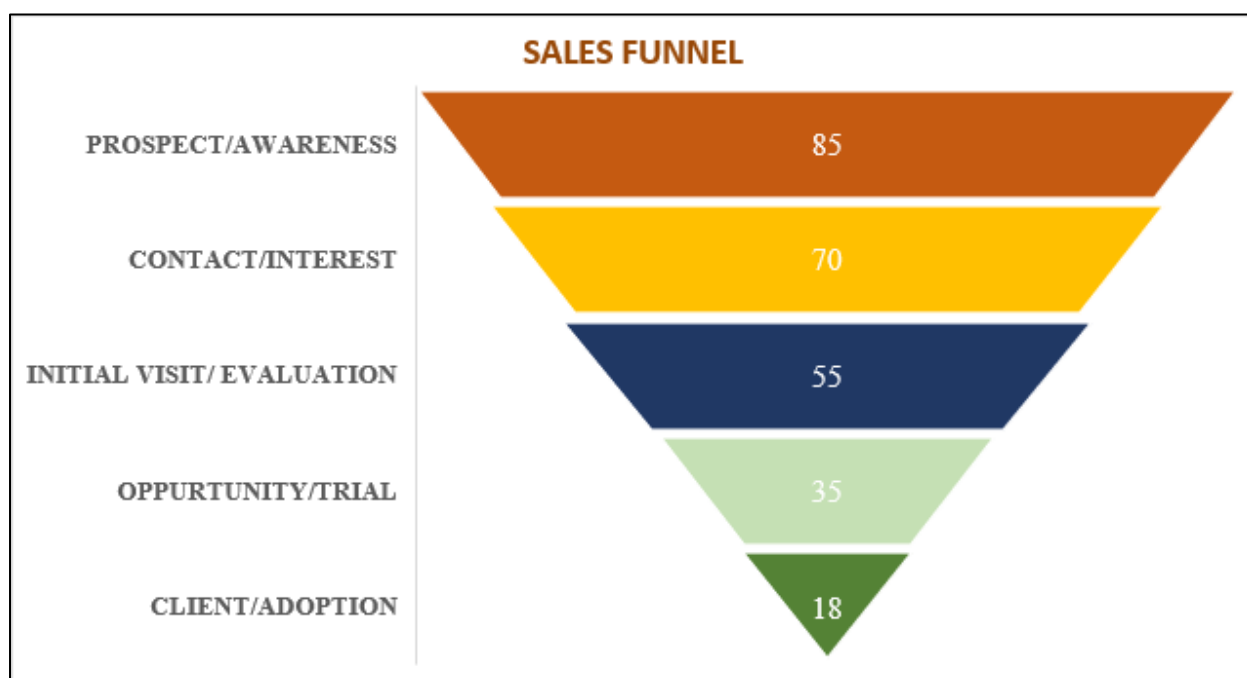


Figure 3 : Sales Funnel for Start-up Business of Foundry Coatings in Chhattisgarh

## Production Process

Figure 4 defines production process as a set of procedures used to transform an input into an output. In order to supply goods and services for customers, it entails merging and using economic resources, such as capital and land. Its basic definition is the conversion of inputs into outputs.

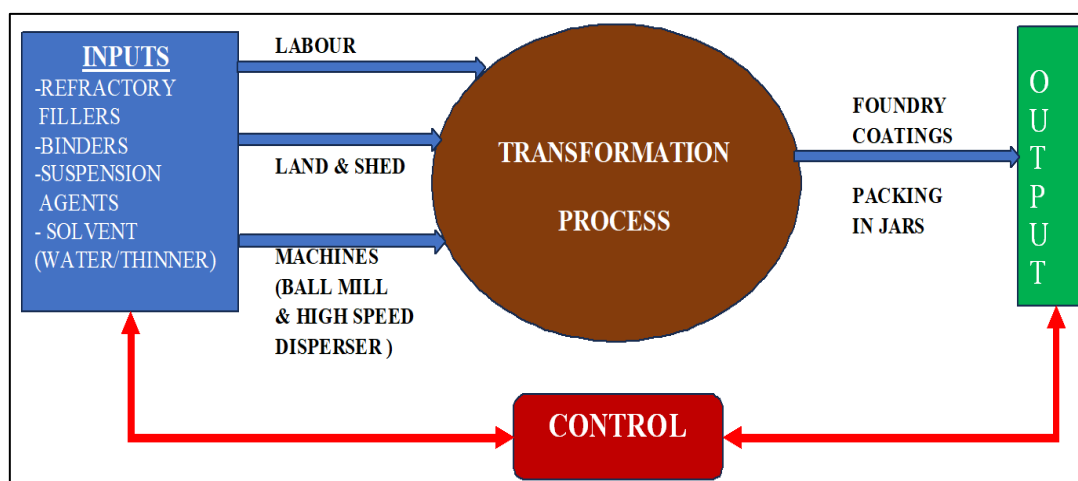


Figure 4 : Production process chart for a start-up business of foundry coatings

The batch transformation process from the inputs such as refractory fillers, binders, suspension agents, solvent etc. into the output – foundry coatings is shown in Figure 4. Here, first the refractory fillers as per the ratio, is grinded in a ball mill to achieve the required particle size distribution and properties. Then along with all the other inputs are charged into high-speed disperser sequentially one by one with proper timings to achieve the required properties, hence to form foundry coatings as per customer specified or standard specific gravity. All the input raw materials are checked as per the specification/quality manual, before the transformation process and can be rejected if the quality norms are not fulfilled. Similarly, all the required properties of foundry coatings are thoroughly checked before final despatch.

## CONCLUSION

Micro enterprises play a significant role in principal fiscal growth of developing countries. These enterprises are either driven by opportunities or necessity, but are sustained by the quality of business practices they adopt. Micro enterprises who implement superior business practices experience higher sales, profits, labour productivity and continued long term business. The attitude to continuously improve business practices elevates chances of steady survival rates and faster sales growth.

The chances of establishing a successful foundry coating micro enterprise in Chhattisgarh is quite high as there are lots of Ferrous foundries here, having a huge

demand for foundry refractory coatings. A right business approach in this field can develop a successful start-up which can have a positive impact both in local employment and innovation. Following the business plan in a systematic manner can help overcome lots of challenges and this micro business of foundry paints can be done throughout India profitably, giving high returns on investment for a long period of time. Make in India successful initiative will certainly lead our country from developing economy to developed economy.

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