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# PRODUCTION AND SALES FORECAST OF FOUNDRY INDUSTRY

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**Abstract:**

The primary customer for castings in the world is the automotive industry, an industry that prides itself on well managed supply chains management (SCM). This Project investigates on the supply chain management of a medium scale foundry and how it works. Patterns, capital equipment, consumables all are needed to make the product which together makes the supply chain. SCM plays an essential role in the industry development, market survival, rate of production and the vibrant communication among the suppliers and customers. It has been met with increased recognition during the last decade both by academicians as well as practitioners.

In today's highly competitive marketplace a successful winner is one who has the ability to satisfy the end customer requirement. Foundry which was selected for this purpose is a medium ferrous foundry setup located in Pollachi , Coimbatore southern part of India which is established in the year 1996, committed to high technology from the very start, produces grey iron from low tensile to high tensile strength grades, Ductile Iron - Pearlitic Ductile Iron to various ranges of Ferrite Ductile Irons. Foundry also specializes in the production range of automobile items like brake drums, Brackets, Transmission Hubs, flywheels, Manifolds, gear box housings, castings for tractor application, valve body assembly castings, motor and pump castings and compressor part castings.

**Introduction:**

Supply chain management is the management of the flow of goods and services and includes all processes that transform raw materials into final products. It involves the active streamlining of a business's supply-side activities to maximize customer value and gain a competitive advantage in the marketplace. Supply chain management (SCM) represents an effort by suppliers to develop and implement supply chains that are as efficient and economical as possible. Supply chains cover everything from production to product development to the information systems needed to direct these undertakings

**Objectives of the Study:**

- To portray the product purchased between 2011 to 2021
- To examine the total quantities product purchased
- To analyse the total sales between 2011 to 2021

**Scope of the Study:**

- From this study Supply chain management of foundry for the past ten years .SCM ultimately turns to be a key factor in market sustainability as it has a direct impact on the product produced, organization's profit percentage and customer relationship.
- The scope of this project involves Plus and minus of the practiced SCM will be the net output of this study from which new suggestions can be provided.

**Methodology:**

- Research Design: Research design is the detailed plan of conducting a search study. Quantitative research method has been used in this study
- Sampling: The data has been collected from foundry industry in Coimbatore District. The data sample were gathered by direct interaction made with the executives of the organization, supportive documents provided by them and observation

**Tools and Techniques Involved:**

- Simple percentage analysis
- Chi Square Test

**Period of Study:**

The period of the study covers from March 2022 to May 2022

**Type of Data Collection:**

The Method of Sample collection plays a major role in defining the outcomes of the project done.In order to contract the report I have collected necessary information form two resources

**Primary Data Collection:**

- Primary Data Collection: primary data collection is the process of gathering raw data by researchers directly from main sources through surveys, interviews, or experiments
- Secondary Data Collection: Secondary data is the type of data that has already been collected by another person or organisation for different purpose

**Limitation of the Study:**

- Limited data's where only analysed due to limited time availability.
- Only major raw material and customers were covered due to vast range of materials and processes.
- Certain data's where kept confidential by the management.
- The data collected for the research is fully on primary data given by the department executives

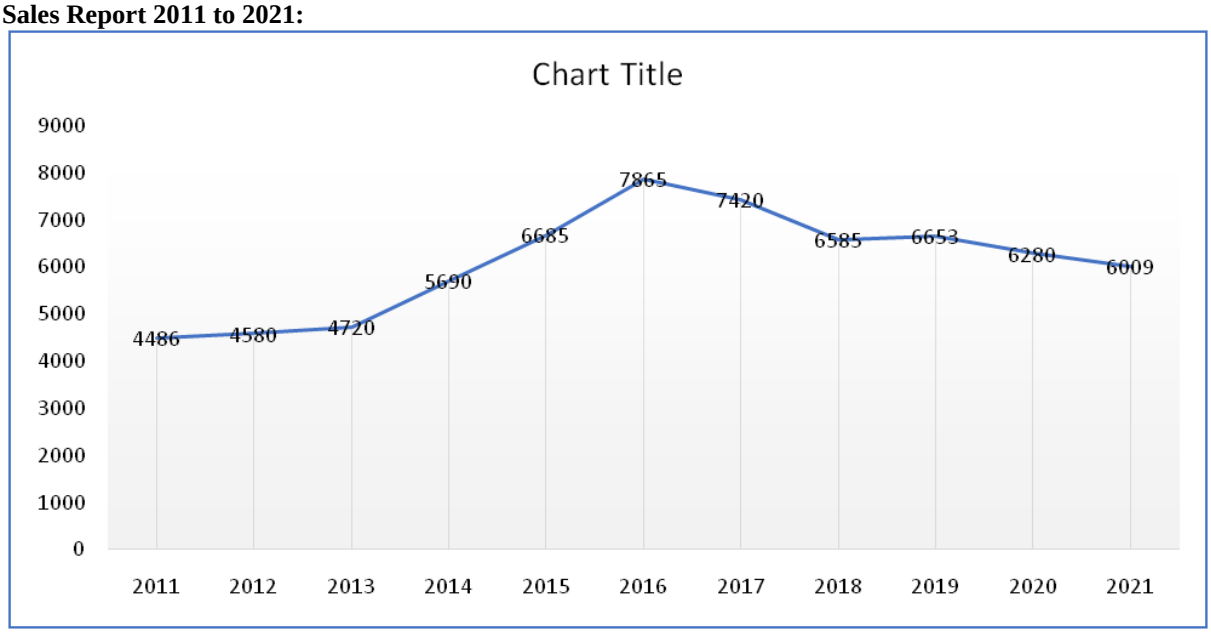
**Data Analysis - Product Purchased in Quantities (Ton):**

| Year | Ms Punching | Silica Sand | Bentonite | Shell Coke | Gotoron | Innoculants & Alloy |
|---|---|---|---|---|---|---|
| 2011 | 250 | 300 | 150 | 220 | 125 | 350 |
| 2012 | 225 | 350 | 200 | 220 | 200 | 340 |
| 2013 | 215 | 300 | 250 | 210 | 200 | 240 |
| 2014 | 275 | 270 | 250 | 220 | 240 | 230 |
| 2015 | 290 | 300 | 200 | 250 | 230 | 320 |
| 2016 | 250 | 350 | 270 | 240 | 240 | 330 |
| 2017 | 250 | 375 | 280 | 240 | 220 | 290 |
| 2018 | 200 | 360 | 260 | 220 | 200 | 340 |
| 2019 | 210 | 350 | 250 | 250 | 240 | 290 |
| 2020 | 190 | 370 | 290 | 250 | 250 | 280 |
| 2021 | 259 | 360 | 240 | 250 | 250 | 320 |
| Total | 2614 | 3685 | 2490 | 2810 | 2395 | 3330 |

**Interpretation:**

Majority of product purchased is Silica sand it totally 3685 ton during the period of 2011 to 2021 reason for highly purchased of silica sand is demand of the core product. Minority of product purchased is Bentonite it totally 2490 ton during the period of 2011 to 2021 this is because bentonite consumption percentage is low (0.5%)

**Sales Report 2011 to 2021:**




**Interpretation:**

Majority of sales tonnage is 7865 in the year of 2016 during the period of 2011 to 2021 reason is high demand. Minority of sales tonnage is 4486 during the period of 2011 to 2021 this is because lots of rejection product

**Chi Square Analysis:**

- Ha - There is an association between purchase and sales
- Ho - There is no association between purchase and sales

Table

| | Purchase | Sales | Total |
|---|---|---|---|
| 2011 | 1395 | 4486 | 5881 |
| 2012 | 1535 | 4580 | 6115 |
| 2013 | 1415 | 4720 | 6135 |
| 2014 | 1485 | 5690 | 7175 |
| 2015 | 1590 | 6685 | 8275 |
| 2016 | 1359 | 7865 | 9224 |
| 2017 | 2165 | 7420 | 9585 |
| 2018 | 1590 | 6585 | 8175 |
| 2019 | 1450 | 6653 | 8103 |
| 2020 | 1400 | 6280 | 7680 |
| 2021 | 1850 | 6009 | 7859 |
| Total | 17234 | 66973 | 84207 |

Calculated value = 446.6
Level of significance=0.05
Table Value =16.92
Ha is true. There is an association between purchase and sales

**Findings:**

The following finding where found as the outcome of the study.

- Max Raw material purchase was made in the year of Due to increased level of production.
- Low amount of raw material was purchased due to automobile crises
- The raw material Price was raised in recent times.
- To analysis of sales tonnage
- Compare the purchase and sales of privies years

**Suggestions:**

- Recycling of raw material or moving to supplier selling recycling sand can reduce the cost.
- Foundry waste generation while pouring can be controlled.
- Increasing the price of end product assist in financial management.

**Conclusion:**

The existing SCM of the organization was found effective. Advancement of Stock keeping can be done to save time. Software can be implemented to reduce the work load. The supply chain management of the organization is found efficient with its flow. Customer satisfaction was made the ultimate goal and hence the required outcomes where obtained. The Indian industry is yet to match the supply chain standards of developed countries and tremendous potential exists for national level integration of supply chains. Some future trends in the auto industry have been highlighted in the paper which necessitates significant changes in supply chain practices in automotive supply chains. There is also a need for external support to the industry by way of supportive Government regulations and policies and development of infrastructure. The industry needs to focus on development of green technologies such as hybrid vehicles, low emission and fuel efficiency to meet futuristic, stringent norms, cost control throughout the automotive value chain (such as frugal engineering in the development of Tata Nano), enhance investments and efforts in R&D specially in auto component manufacturing sector and build up scale to enhance export.

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