

New Product Development Activities among Small and Medium-Scale Sheet Metal Working Enterprises in India

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Abstract - This study examined the characteristics of Indian Small and Medium Scale Sheet Metal Working Enterprises that influence new product development (NPD)

activities; determined the tactics used by the Small and Medium Scale Sheet Metal Working Enterprises to develop new products; and investigated the internal and external factors that can be used to differentiate between Small and Medium Scale Sheet Metal Working Enterprises that have the tendency to develop new products from those that do not. In general, NPD activities were found to be very low among the firms studied. Firm owners' educational qualifications and years in business appear to be the discriminant factors that can be used to differentiate firms that are engaged in NPD activities from those that do not, an indication that for Small and Medium Scale Sheet Metal Working Enterprises, NPD activities depend largely on the competencies and capabilities of the owners.

Key Words: customer-related strategies, technical support, market intelligence

1. INTRODUCTION

Essentially small scale industries comprise of small enterprises who manufacture goods or services with the help of relatively smaller machines and a few workers and employees. Basically, the enterprise must fall under the guidelines set by the Government of India. At the time being such limits are as follows,

- For Manufacturing Units for Goods: Investment in plant and machinery must be between 25 lakhs and five crores.
- For Service Providers: Investment in machinery must be between 10 lakhs and two crores.

In developing countries like India, these small scale industries are the lifeline of the economy. These are generally labour-intensive industries, so they create much employment. They also help with per capita income and resource utilization in the economy. They are a very important sector of the economy from a financial and social point of view.

1.1 Characteristics of Small Scale Industries

- **Ownership:**
Such units are generally under single ownership. So it is a sole proprietorship or sometimes a partnership.
 - **Management:**
Both the management and the control generally is with the owner/owners. So the owner is actively involved with the daily running of the business.
 - **Limited Reach:**
Small scale industries have a restricted area of operations. So they meet local and regional demand.
 - **Labour Intensive :**
These small scale industries tend to use labour and manpower for their production activities. So their dependence on technology is pretty limited.
 - **Flexibility:**
These units are more adaptable to their changing business environment. So in case of sudden changes or unexpected developments, they are flexible enough to adapt and keep carrying on. Large industries do not have this advantage.
 - **Resources:**
They use local and readily available resources. This also helps the economy with better utilization of natural resources and less wastage.
- ## 1.2 Role of Small Scale Industries in the Indian Economy
- **Total Production :**
These enterprises account for almost 40% of the total goods and services produced in the Indian economy. They are one of the main reasons for the growth and strengthening of the economy.

- Employment :

These small scale industries are a major source of employment in the country. The whole labour force cannot find work in the formal sector of the economy. So these labour-intensive industries provide a livelihood to a large portion of the workforce.

- Contribution to Export :

Nearly half of the goods (45-55%) of the goods that are exported from India are produced by these small enterprises. About 35% of direct exports and 15% of the indirect exports are from the small scale industries. So India's export industry majorly relies on these small industries for their growth and development.

- Welfare of the Public :

Other than economic reasons, these industries are also important for the social growth and development of our country. These industries are usually started by the lower or middle-class public. They have an opportunity to earn wealth and employee other people. It helps with income distribution and contributes to social progress.

1.3 Stages in NPD of Sheet Metal Part

1. DFM stage - Drawing for Manufacturer

In this stage you need to study the whole drawing according to dimensions, GD&T, and specification. After that you need to submit a FEASIBILITY check document in which you need to specify the process for manufacturing the part and also ask to remove some non-feasible tolerances from drawing based on GD&T.

2. RFQ stage - Refer for Quotation

After submitting the required changes in the drawing, customer check our feasibility document and make the changes in the drawing if possible and send the drawing for quotation. At this stage we need to confirm that customer had made all the changes recommended by us. Now the stage comes where we need to make quotation and finalize the product cost.

Quotation- quotation made by adding following cost to it,

- Material cost
- scrap cost
- bought out parts cost
- process cost
- assembly and inspection cost

- packaging and transportation cost

- profit

By taking all the parameters into consideration we finalize the approximate cost of single piece cost. The quotation then given to customer for finalization and then they make their changes and we finalize the cost.

3. APQP documents - after finalizing the cost now customer ask for APQP documents along with the quotation.

In this document we need to submit 3 documents

- Process flow diagram

- Quality assurance plan

- Print and process diagram

These 3 documents specify the process required for manufacturing the part, various quality inspection stages and the whole process from RM procurement to Final product dispatch.

4. After referring all the documents and finalizing the product cost, customer gives go ahead for product development and manufacturing.

2. RESEARCH METHODOLOGY

The descriptive methodology has been used to collect the data, the data collected mostly from secondary sources from various journals, books, articles, government published annuals reports, website of different government agencies.

3. Challenges faced by the small scale industries

In spite of expedient contribution by the SSIs towards the Indian economy, SSIs does not get the indispensable support from the concerned Government departments, financial institutions, Banks, credit societies and corporate thus the SSIs are becoming handicap in the face of competition at national and international markets. The major problems faced by the SSIs are discussed below:

3.1 Scanty credit assistance

Scanty and timely supply of credit is one of the major problems faced by SSIs in India. Scarcity of finance and weak creditworthiness is the main barrier for the development of SSIs in India. The creditworthiness of these small borrowers is generally weak and therefore they face unwilling creditors who may be persuading to lend only at high rate of interest.

3.2 Uneven and poor quality of raw material

SSI units face extreme problems in procurement of raw materials whether from local or international market. The problems arise due to absence of sufficient quantity of raw materials, poor quality of raw material at exorbitant price. The entrepreneur of SSI units has lack of knowledge about the procurement from foreign market. Large scale industries enjoy economies of large scale operation hence can procure the quality raw material at very reasonable price, thus can sell the products at cheaper price as compared to SSIs.

3.3 Absence of organised marketing process

SSI units do not have any organised marketing process and even does not appoint any marketing organisation for marketing of products or services and hence their products compare unfavourably with the quality of the products of large scale industries. They suffer competitive disadvantages in comparison to large scale industries, as large scale industries infuse large amount of money on branding and promotion activities.

4. Inadequate infrastructure

Inadequate infrastructure is a major problem for the SSI units to grow and prosper. Most of the SSI units are located in semiurban, urban and rural areas where the power supply is inadequate to run big machines, several times power cut off, and poor road connectivity. Thus absence of adequate infrastructure adversely affects the productive schedule of the enterprise leading to underutilization of capacity. More over the machineries, equipments and technology employed by the SSIs are out dated, where the large scale organisation enjoys the competitive advantages. Beside the above mentioned problems SSI units suffer from a number of other problems also poor managerial capabilities, lack of adequate warehousing for free supply of goods, lack of skilled manpower, lack of appropriate information, etc. Due to all these problems the progress and development of Small scale industries could not reach the distinguished stage.

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