



## APPLY SWOT ANALYSIS TO INCREASE MANUFACTURING PRODUCTIVITY

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### Article history:

Submitted on: July 2016

Accepted on: August 2016

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### ABSTRACT

This work will be based on the performance of the production by the manufacturing sector in INDIA and its impact and importance for SMMEs, particularly for job creation. The focus of the research is to provide an overview of the production by the manufacturing sector to ensure a better understanding of the current performance of the total sector in the economy, the performance of the subsectors within production by the manufacturing sector and the potential for SMME development within the sector, as well as the policy framework that governs the production by the manufacturing sector. International production by manufacturing statistics shows the dominant position of the US, China, and to a lesser extent Japan, as the manufacturers of the World. It also shows how China increased their production by manufacturing output. The Chhattisgarh District analysis additionally aims to identify role players within each sector, as well as the strengths and weaknesses of the subsector, while also highlighting the current and future opportunities.

**KEYWORDS: Manufacturing, SWOT analysis, Production.**

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### INTRODUCTION

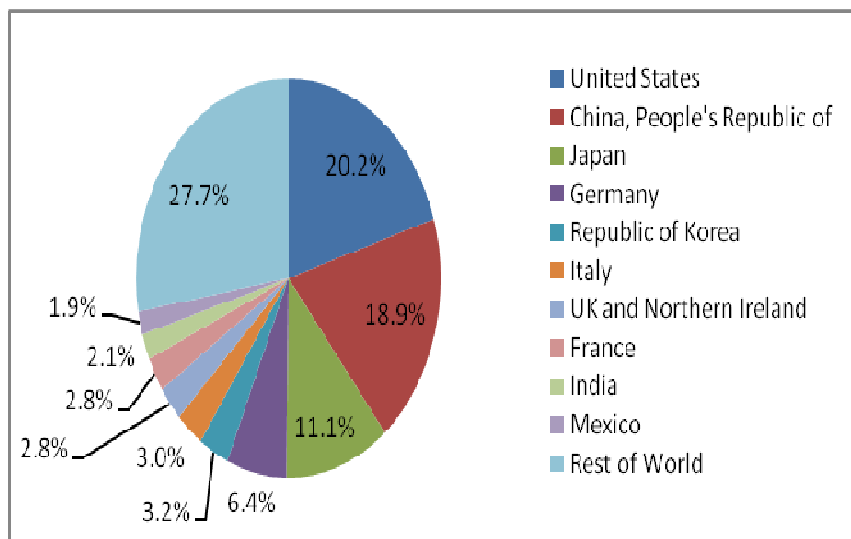
Chhattisgarh Market Research was commissioned by the Small Enterprise Development Agency (SMME) to conduct a desktop research study on the performance of the production by the manufacturing sector in INDIA, to determine the role of small to medium enterprises in the production by the manufacturing sector. The study dictated that the production by the manufacturing sector be analyzed on a national, provincial and local level which meant that

all policies and programs reviewed also be analyzed on these three levels. The study also includes a review of the sub sectors in the production by manufacturing sector, which encompass the current performance of each sub sector and the challenges experienced by the sub sectors. The overall aim of the study is to identify the potential that the production by manufacturing sector has for job creation through SMME development. [18]

An analysis of the economic growth and development strategies was completed to establish if there is cohesion between National, Provincial and Local governments departments. The purpose of this study is to provide a detailed look into the production by manufacturing sector and the potential that this sector holds for employment creation through an analysis of existing data and documentation [7]. The research further looks at the requirements that are needed to support growth and development for established SMME entities within the production by manufacturing sector, through programs, interventions, and strategies that are available.

Production by manufacturing is a wealth-producing or wealth creating sector in the economy, where the service sector tends to be wealth consuming (Friedman 2006). Even though the tertiary sector in most economies is currently dominant as a percentage of the economy and employment creation, most of these economies were built from a strong production by manufacturing base.

According to the 2010 United Nations (UN) data, the US is still the largest manufacturer in the world, with a share of 20.2% of the world’s production by manufacturing, closely followed by China at 18.9%. Japan is third with 11.1% of production by manufacturing and Germany fourth with 6.4%. The top 10 countries in the world manufacture 72.3% of the world’s production by manufacturing as shown in Figure 1



**Figure 1** Share of Worlds productions by manufacturing of the top 10 production [18]

**OVERVIEW:**

- To study the production by manufacturing sector and its sub sectors with a view to quantify the market potential for current and potentially new products, systems, and SMME services.
- To create new products and provide support to existing enterprises that has the potential to create jobs within the production by manufacturing sector.
- To identify market penetration options and strategies to capture opportunities.
- To identify key stakeholders in the production by manufacturing sector and recommend relationships or partnerships that will contribute to the success of government’s driven to create employment.

INDIAN production by manufacturing (not shown in the graph) has increased in dollar terms from \$30 billion in 2010 to R44 billion in 2016 (in constant 2011 prices), but the SA share of world production by manufacturing output has decreased from 0.61% in 2010 to 0.5% in 2016. This highlights the need for domestic policy to improve the domestic economy and production by manufacturing output. Table 1 shows the production by manufacturing share of total gross fixed capital formation (GFCF) for the top 10 production by manufacturing countries and INDIA. It is clear from this table that China is building their economy on production by manufacturing activity, having a share of 43.1% of production by manufacturing as a percentage of GVA in 2016. The republic of Korea also has a high production by manufacturing share of 30.4% in 2010 (up from 27% 2010). Germany and Japan have got production by manufacturing shares of GVA of above 20%. INDIA and Mexico are below 18%.

**Table 1:** Production by manufacturing share of gross value added in the top 10 production [5]

	2010	2011	2012	2013	2014	2015	2016
United States	13.6%	13.7%	13.7%	14.0%	13.6%	12.6%	13.4%
China, People's Republic of	41.6%	41.8%	41.8%	42.1%	42.2%	42.0%	43.1%
Japan	20.1%	20.6%	21.1%	21.6%	21.7%	19.0%	20.8%
Germany	22.4%	22.7%	23.5%	23.6%	22.4%	19.4%	20.8%
Republic of Korea	27.0%	27.5%	28.3%	28.8%	28.9%	28.3%	30.4%
Italy	18.7%	18.5%	18.7%	18.8%	18.1%	16.2%	16.6%
UK and Northern Ireland	13.6%	13.3%	13.1%	12.8%	12.4%	11.7%	11.9%
France	13.2%	13.2%	13.0%	12.9%	12.5%	11.4%	12.3%
India	15.4%	15.6%	16.2%	16.4%	16.0%	16.1%	15.9%
Mexico	18.7%	18.7%	18.8%	18.4%	18.0%	17.2%	17.8%

SMMEs or SMEs as they are sometimes referred to are important creators of value added and employment in economies. Large companies were all once small SMMEs (companies like Microsoft, Apple and Vodafone started as small companies).

SMEs are the engine of economic growth and are essential for a competitive and efficient market. Research has shown that SMEs are critical for poverty reduction and can play a particularly important role in developing countries. SMEs are the largest provider of employment in most countries (especially of new job creation) and are a major source of technological innovation and new products.

Thus, the change in the relationship between natural and exotic diversity does not depend on spatial scale per se, but happens whenever environmental conditions change to promote species coexistence rather than competitive exclusion. [5]

Jennies angelis et al. (2012) Lean is a globally competitive standard for product assembly of discreet parts. Successful Lean application is conditioned by an evolutionary problem-solving capability of the rank and file. This is in itself contingent on employee involvement in improvement programs and the implementation of appropriate practices. [8]

### **OBJECTIVE OF WORK**

Included in this introduction is the project background and objectives as expressed in the Terms of Reference and project briefing document. With the SMME sector being identified as a key sector to drive job creation and economic development, SMME identified three key sectors where SMME development would result in direct job creation.

The three sectors are:

Production by manufacturing

Agriculture (Primary and Agro processing)

Services Sector

Through the study of the production by manufacturing sector, SMME hopes to understand each sector and make future decisions relating to products, programmes, and developing partnerships with other organizations to optimally assist SMMEs within the production by manufacturing sector based on the findings. SMME has identified the following objectives or outcomes from the study to consider when making decisions regarding future products and programs to assist SMMEs within the production by manufacturing sector:

- The identification of foreseeable sector wide developments within the production by manufacturing sector.

- The identification of Spinoffs due to developments in the production by manufacturing sector.
- The identification of possible opportunities for SMMEs within the production by manufacturing sector.

## OVERVIEW OF MANUFACTURING

Production by manufacturing is a process involving tools and labor to produce goods for use or sale as intermediaries, or as final products, either domestically or internationally. The term refers to a range of human activity (labor, entrepreneurship and innovation), combined with tools or capital equipment in a production process in which raw or intermediate products are used to produce final (or intermediate) goods.

According to Statistics Analysis (SA) the standard industrial classification (SIC) system classifies production by manufacturing activities under the major division 3 that starts with the production by manufacturing of Chemical products, Textile and Electric machinery with the production by manufacturing of paper products and Metals product (that includes categories like jewellery, musical instruments, sport goods, other production by manufacturing like crayons, chalk, pens and pencils and recycling). The SA production by manufacturing sector experienced a severe contraction during the international financial crisis. The production by manufacturing sector, according to data from Statistics INDIA, contracted with 10.4% in 2010, Table 2 show the production by manufacturing sectors as a percentage of the total industries at basic prices and show how the tertiary sectors, including finance, real estate and business services, transport storage and communication and finance, real estate and business services increased as a percentage of GDP [7]. Although this movement from primary and secondary to the tertiary sectors is part of economic evolution as shown by, amongst others Rostow, the production by manufacturing sector remains a very prominent and valuable industry and can contribute immensely to economic growth, job creation and export earnings. This is also recognized in numerous economic and industry growth strategies.

**Table 2:** SA sector contribution to GDP in 2010

Manufacturing Sector	Manufacturing %
Chemical Product	32
Electric machinery	12
Metal Products	10
Textile Clothing	17
Paper Products	11
Other non-Material	18

### ***Forward and Backward Linkages in the Production***

The value chain between different industries is potentially a very complex subject. One method of looking at the value chain is from a supply-use point of view (supply-use matrix) where you can track all the inputs from one sector to another, or all the usages from one sector to another [4]. This is also sometimes referred to as direct forward and backward linkages from a specific industry’s point of view.

The 2010 supply-use table from Statistics SA is shown in the Appendix, with the focus being on the production by manufacturing sector. The primary and tertiary sectors have been condensed. A more detailed analysis can also be performed, for example, by looking at the share (percentage) of each sub-sector to the total sector, or by looking at the multiplier impact. But this is outside the scope of this research and future research can focus on this.

The tabular data provides very detail information and although the detail will not be discussed, the principles will be provided on how to interpret the table with one example. Such a tabular data can be very useful to support policy making by looking at potential ‘gaps’ in the value chain that can for example be filled up with SMMEs. This can also be interpreted with employment information and import and export information per sector.

### ***Forecasting in the Production***

Forecasting the production by manufacturing sector is a difficult exercise, given the dependence of such a forecast on both the uncertainties of the international environment, as well as the domestic growth and government policy environment. Other variables that will impact the growth in the production by manufacturing sector will be the exchange rate changes (not only the rand dollar but also the dollar euro), interest rates (that is expected to remain lower for longer; potentially for the remainder of 2012) and the impact of the private sector (and their risk appetite) and government investment (including the 17 strategic infrastructure projects that government has identified).

### **FOCUS ON PRODUCTION BY MANUFACTURING IN RAIPUR**

The city of Raipur has undertaken the responsibility of generating extensive support structures and initiatives that are designed to create sustainable employment opportunities in the production by manufacturing sector. The structures include:

A drive to ensure that the production by manufacturing sector is supported by a vibrant SMME component, indicating that SMMEs in the production by manufacturing sector will be enhanced through support and funding initiatives.

Through the City of Raipur’s five year economic development plan, a production by manufacturing sector intervention has been earmarked to provide infrastructure and business support to the SMME entities in the production by manufacturing sector.

### **FOCUS ON PRODUCTION BY MANUFACTURING IN RAIGARH**

The Raigarh Strategic plan to stimulate the production by manufacturing sector means to refer to policy orders and in particular the National Integrated Production by manufacturing Strategy (NIMS) which is intended at bringing together all role-players (Government; Industry leaders etc) in the sector to collectively ensure that there is sustainable growth and development. Another policy that the CG government plans to draw from is the Advanced Production by manufacturing and Technological Strategy (AMTS) which focuses on sector based initiatives to improved the technological equipment and modern methods to production by manufacturing in order to stimulate declining industries such as Metal Pressing and the Transport sector which has contributed largely to the Raigarh’s production by manufacturing sector recording double digit decline.

### **FOCUS ON PRODUCTION IN KORBA**

The Korba District was the largest contributor to the production by manufacturing Coal of the province at 54.8% in 2010, highlighting the potential that this district has in the production by manufacturing sector. The Agricultural and Mining sectors play a critical role in the production by manufacturing sector value chain, through the supply of raw materials, especially for the production of wood products and the food processing industry. The provincial government has earmarked basic “Job Driver” industries in production by manufacturing to facilitate job creation:

Agro processing

Forestry (paper and pulp production by manufacturing)

Mining

Energy (Bio Fuels)

### **SWOT ANALYSIS**

SWOT analysis is a precursor to strategic planning and is performed by a panel of experts who can evaluate the organization from a critical perspective (Gibis et al. 2001). This panel could comprise senior leaders, board members, workers, medical staff, patients, community leaders, and technical experts. Panel members base their assessments on consumption rates, outcome measures, patient satisfaction statistics, organizational performance measures, and financial situation. While based on data and facts, the conclusions drawn from SWOT analysis are an expert opinion of the panel.

### ***Challenges and Barriers Facing the Agro Processing sector***

Rural retailers are mainly affected by the depressed state of rural economies, overtrading, the lack of finance and financial infrastructure, the lack of business training, ageing infrastructure and the weakness of local government and of social capital.

Informal traders’ main challenges include the poor quality of their equipment, infrastructure, competition, cash flow and stock shortages.

For independent, small wholesalers stumbling blocks rise from vertical integration and wholesaler consolidation, price pressures, the tendency of market giants to increase their ranges of products and services, the lack of skills relating to technological improvements and the absence of integrated supply chain management techniques.

E-tailers are severely confronted with the difficulty of setting up a competitive business model under the price pressure exerted by shop-based retailers, Web site design and marketing challenges, customer gaining and delivery and logistics are complex tasks. The low penetration of the Internet in Chhattisgarh, especially the lack of affordable access to broadband, currently strongly restricts the business chances of e-tailers, causing them very low profits and low life expectancy.

Due to the complex nature for this sector, limited production by manufacturing plants and increase logistical costs the chemicals sector faces the challenge of being uncompetitive in the global market hindering growth. The industry is in a restructuring phase in order to become more globally competitive and could potentially be a driver of job creation in the future. Even though the sector is highly specialized the potential for job creation lays in the Chemical end products and specialty end products industries. SWOT analysis of Chemical Product is shown in Table 3.

**Table 3** SWOT analysis on Chemical Products

Strengths Large contributor to the GDP Large sector that is diverse. Products manufactured are usable across many industry sectors. Clear areas for SMEs to operate in.	Weaknesses Industry dominated by large multinationals High percentage of imports Highly specialized areas Lack of management and marketing skills. Lack of business skills and an entrepreneurial appetite. Lack of university qualified professionals. Lack of information on complex export laws.
Opportunities Large markets. Large spectrum of products and uses of chemicals.	Threats Current Economic Climate Cautious Consumer Spending Weak exchange rate.



Large potential export market.	Lack of access to new technologies. Legislative impact on business. Environmental issues.
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Carbon steel deliveries by the Chhattisgarh primary steel industry amounted to 5,665\* million tons in 2009, a decrease of 13.5% compared with 2011. During 2014 3,884\* million tons of carbon steel products were sold on the local market, representing a decrease of 28.3% compared with 2008. During 2009 1,772 million tons of primary carbon steel products were exported, an increase of 58.2% compared with 2009.

Imports of carbon and alloy primary steel products (excluding semis, stainless steel and drawn wire) during 2010 amounted to 0,657 million tons, an increase of 36.3% compared with 2009.

The range of primary carbon steel products and semi-finished products manufactured in INDIA includes billets, blooms, slabs, forgings, light-, medium- and heavy sections and bars, reinforcing bar, railway track material, wire rod, seamless tubes, hot- and cold-rolled coils and sheets, electrolytic galvanized coils and sheets, tinplate and pre-painted coils and sheets. The range of primary stainless steel products and semi-finished products manufactured in INDIA includes slabs, plates and hot- and cold-rolled coils and sheets.

**Table 4** SWOT analysis on Metals sector

<b>Strengths</b>	<b>Weaknesses</b>
<p>Chhattisgarh is the biggest producer of metal, and one of the leading producers of gold, diamonds, base metals and coal.</p> <p>Chhattisgarh holds the largest natural reserves of gold, metal-group metals, chrome ore and manganese ore, and the second-largest reserves of zirconium, vanadium and titanium.</p> <p>Stainless Steel is the fastest growing in a grouping of competitor metals. In a recent global growth comparison, stainless steel had grown a significant 6.16%, beating Aluminum at 3.51%, Steel at 3.47%, and Copper at 3.23%, Zinc at 3.02% and lead at 2.41% annual growth.</p> <p>The country has world-scale primary processing facilities covering carbon steel, stainless steel and Aluminum, in addition to gold and platinum. It is also a world leader of new technologies, such as a ground-breaking process that converts low-grade superfine iron ore into high-quality iron units.</p>	<p>Limited access to raw material for local beneficiation</p> <p>Infrastructure – Shortages of critical infrastructure such as rail, water, ports and electricity supply have a material impact on sustaining current beneficiation initiatives and a major threat to future prospects of growth in mineral value addition.</p> <p>Research and Development: Skills sought for expediting local beneficiation - While the challenge for skills is not limited to Chhattisgarh, the skills-supply pipeline for scientists and engineers requires specific attention.</p> <p>Access to international markets for beneficiated products – the current trade barriers (both tariff and non-tariff) in some prospective recipients of Chhattisgarh beneficiated products limit access to these markets.</p>

<b>Opportunities</b>	<b>Threats</b>
<p>There is enormous potential for the consumption of steel, aluminum, chrome and PGM in metal products fabricated for the automotive industry. Aluminum is used to make cast and forged products, such as rims, while stainless steel (that includes chrome) and PGM are used extensively in various components of the exhaust system, particularly in catalytic converters. The production and export of catalytic converters have grown enormously over the past ten years. There are further opportunities in a broad range of consumer goods including garden furniture.</p>	<p>Cheap imports from other countries such as China. High labor production costs locally. There is also a negative knock on effect of a strong currency. Port costs out of Transnet’s Durban harbor, the most important facility for manufactured exports, are also higher than in many of Europe’s biggest ports. Cosatu, a key constituency of the governing party, is unlikely to agree to a less regulated labor market if employment remains stable and no new jobs are created. There is simply no incentive for them to create jobs, rather their interest is to retain members’ jobs. Cost of latest technologies to process metals.</p>

## CONCLUSIONS

This work shows the performance of the production by manufacturing sector in INDIA and its impact and importance for SMMEs, particularly for job creation. There is a greater need for policy alignment, not only for industrial plan, but also, for example, targeted education for important sectors. Transport strategies and employment regulations must also be aligned to create employment and to develop the production by manufacturing in Chhattisgarh sector. SMMEs have the potential to generate more employment opportunities, in comparison to large companies, and must be supported to create sustainable employment in three districts (Raipur, Korba & Raigarh).

Due to saturated and over-serviced markets for manufactured products, as well as established supply chains and complicated supplier personal relationships, small production by manufacturing business face serious challenges in breaking into local markets.

The Chhattisgarh economy, including the production by manufacturing sector is also dominated by monopolies who do not always embrace new entrants into the market, as these businesses are used to dominating the regulatory institutions within the sub-sectors as well as high margins and returns. Coupled with a maturing organised labour sectors and transparent auditing institutions and competition tribunal, many opted for capital & technology investment and subsequent less labour oriented processing and production by manufacturing.

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