



MAURITIUS RESEARCH COUNCIL

AN OVERVIEW OF MAURITIAN MANUFACTURING INDUSTRIES – TOWARDS COMPETITIVENESS

Final Report

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INDUSTRIAL AND VOCATIONAL TRAINING BOARD

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TOWARDS COMPETITIVENESS**

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EXECUTIVE SUMMARY

Aims of the study

In addressing the issue of Mauritian manufacturing towards competitiveness, the study focused on a wide cross subject from productivity to strategic planning. Where foreign experiences were brought to blend with the local one. Participation of various manufacturers and contributions from different economic sectors showed the growing interest in developing a wide range of strategies in finding solutions for the Mauritian manufacturing industries towards competitiveness which was indeed very promising and encouraging.

The strategy and policy issues for promoting manufacturing industries towards globalisation is a matter of commitment in creating a clear defined mission, objectives, vision and institutional support in the field of training, finance, management, market and technology. The strategy for the development of manufacturing sector is, in fact two fold of new, modern manufacturing sector and consolidate / expansion of the existing enterprise. In other words, it means ensuring survival and growth of existing firms.

Approach Of the Study

The study linked competitive strategy and manufacturing process technology by identifying pattern between the way firms compete and the technologies they use. Furthermore, it examined how those patterns emerged. The research advances our understanding beyond normative statements and progresses towards building a meaningful, empirical based model/ framework of the dynamic manufacturing strategic.

The case research design overcame the disadvantages of studying too wide a variety of manufacturing industries and technology, yet provided sufficient diversity to observe patterns among firms with different competitive strategies. The manufacturing industries, major concern today is to find new ways of improving and sustaining the country competitiveness in the global market place.

Mauritius past economic success is attributable to the national strategy for industrialisation, aiming at an expansion of export- oriented industries as a means of job creating jobs for the huge source of cheap labour available and foreign exchange.

In preparing the manufacturing industries to meet the challenge of trade liberalisation and globalisation, we will need to develop not only modern manufacturing industries but also those who are internationally competitive and export – oriented. The focus for their future therefore, will be on their viability and competitively and their capacity to modernise and export.

However, several key propositions emerge from the research. First, the strategic groups concept of strategy helps identify, assess, and compare the specific types of technologies appropriate for competing within specific market environments. With the complexity of both strategy and technology variables and the contexts in which they operate, attempting to directly link more generalised concepts of strategies and technologies remains slim and does not fully explain the alignment dynamics.

Second, the appropriate technologies for a firm to adopt within a given competitive situation are often dictated by customer demands and market forces.

Third, the pattern by which a firm fits its technology to its strategy follows an interactive, although a new technology is generally adopted to support a given strategy, the technology's full capabilities are often unknown prior to use. Consequently, exploiting the technology's complete competitive advantages requires adjustment in the firm's strategy.

Fourth, the failure to adopt an appropriate new technology, or the failure to realign the firm's strategy to new technology, weakens the competitive position of the firm.

Fifth, there is evidence that there is a relationship between broadly defined industry types and the manufacturing task.

The study provides an operationalisation of a manufacturing strategy, and shows that it is possible to make comprehensive analyses of their concrete application within manufacturing, as well as of the manufacturing strategy's

relation to business strategy. The analysis of the manufacturing with a manufacturing strategy had a return on sales of average 8 per cent for the most recent fiscal year, while those without one shows a downfall average of 2½ per cent. The study indicates that companies with formal strategic planning financially outperform non-planners. In addition, it is possible that the business units with a manufacturing strategy are well managed in general.

Manufacturing strategy, performance measurement and improvement programme is popular items. Nevertheless only half of the firms questioned were able to provide clear and reliable answers. When processing these answers, it turned out that in many companies there is still a lack of consistency between business strategy, performance measurement systems and improvement actions. In general, the approach towards quality is much more consistent than the approach towards time-related objectives. Finally, the study in manufacturing strategy appears to be gaining momentum or consideration.

Hence, to summarise the study overview and formulate an outlook of manufacturing industries, it is worthy to develop a few potential pit falls facing the manufacturing industries currently and each of the separate assessments is based on subsequent rigorous analysis such as:

Level of Productivity

It has noted that productivity started to establish itself somehow in Mauritian manufacturing industries, according to the respondents, its seems about 78 % are very concern about this issue as it depends largely upon their success and their survival. But according to them lot needs to be done to achieve a higher degree of productivity to enable Mauritian manufacturing to compete with the Asian countries, bearing in mind the liberalisation of trade is just at our doors step.

Therefore it is imperative to set up a national productivity council to monitor these important criteria in respect to the manufacturing industries and the outcomes could easily be used as productivity indicators in the national economy.

For an organisation to improve labour productivity, it is equally important to reduce additional labour complement just as it is important to invest in new technology. Productivity and profitability go hand-in-hand. On the other hand, companies that invest in better capital or in training employees now, will later

on be able to enjoy the benefits of their investments. They will produce better products at more competitive rates.

Increasing in productivity is the surest way of maintaining profits both now in the future. Productivity indicators can help determine if an organisation is progressing or moving backwards. They can also analyse the specific role of capital, labour, machinery, energy, materials, and all the resources used to generate the products and services of the business.

Level or Transfer of Technology

There does not seem to be a large community of foreign investors in Mauritius 85% of the organisation are 100 % Mauritian owned with only 8% by jointly by Mauritian and foreigners venture and some 5% are foreign owned.

Over the five years we have seen business process engineering play an ever increasing role in the development of information systems. Information System is becoming a key competitive advantage. Based on the figures of survey we can easily suggest that new technology is making its way slowly in Mauritian manufacturing industries [both local and foreign owned]. These firms currently operating in Mauritius, most of them operate using a mixed mode of both manual and automated processes, but there is a handful manufacturing industries do significantly use fully automated processes.

Therefore it is imperative to attract Foreign Direct Investment in these organisations in term of new technologies and their know-how to increase productivity and their survival prospective. Nevertheless, it has noted that Foreign Direct Investment has reached a decline stage and a very slight amount of investment is directed towards the garment and apparel industries, whereas other sectors showed a downfalls percentage into investments in new technologies in their corporate plan.

Investment in the acquisition of new equipment and / or upgrading existing equipment is imperative or sine-qua-non for economic survival today, particularly in view of rising labour price.

Thus, it is clear that there is a need for a shift towards an information-based economy in order to remain internationally competitive. As such, the adoption of Information Technology in Mauritian manufacturing industries would

provide advantages, such as solutions to labour shortages in certain skill areas, and compensation for Mauritius physical remoteness from major markets.

Most companies irrespective their size and turnover, have invested in new technology for reasons of quality improvement and production volume, followed by labour-cost reduction and as a solution to labour shortage problems. Generally, in fact, quality improvements have indeed been experienced, followed by increase in volume of production.

Some critical points in relation to manufacturing industries

Modernisation

Modernisation will lead to better productivity and at the same time better quality of the goods produced. When once the decision to modernise has been taken by the management, one of the questions that will have to be decided is the pace as well as the level of modernisation that is, speed with which machines should be replaced and the level of technology that should be introduced.

Training

Training is another aspect, which cannot be disregarded while increasing productivity. But training on the job is an important aspect of productivity that has received very little attention in Mauritius.

Industrial Relation

Maintenance of good industrial relation is essential to increase productivity. This relation can exist only if the two parties, labour and management are assured of independence and self- respect; if they accept and implement a common code of behaviour towards each other and a degree of mutual confidence and understanding within the area in which both have to operate. There should be a consistency in the basic policies of both and there should be no attempt at exploiting each others' weaknesses or difficulties.

Globalisation

During the past twenty years a new industrial revolution has occurred.

It is driven by an international sociopolitical dimension known as “globalisation”. Never have so many international changes affecting industry as a whole, and manufacturing in particular, taken place in so short a period of time, and it is only by considering these changes together that their full impact on industry and commerce, and hence on environmental issues, can be appreciated.

The development plans of the industrialised and emerging industrial countries depend vitally on a sustained growth of manufactured exports. Competitive advantage is shifting, globalisation of production is rising at speed and many new competitors are entering the scene.

A majority of manufacturing industries has viewed globalisation and liberalisation with skepticism from the word go. It is obvious that the industry, which has been under some sort of protection, feels a threat to its survival. What it could not see is the floodgates of opportunity that have been opened worldwide for these manufacturing industries. One has to admit that high capital costs and rising power tariffs have quite often put the industry in a quandary. But input cost and its availability as well as lower wage bill have always proved advantageous.

For example, some Mauritian domestic manufacturing industry have been seeing a slow decline in its growth rate and their price realisations have stagnated at about one –fourth of other leading countries. This clearly indicates the country’s lack of focus on value addition in its exports. This again is the result of its neglect of upgradation and modernisation. Global garment industry is in ferment today. Rapid fashion changes and flexible machines are forcing the pace of the industry.

These industries can, only be successful in toning up the quality of the products, because in developed countries, buying interests favour high quality, Eco-friendly products. Buyers are fashion-conscious and comfort-conscious as never before. Therefore it is important for these industries to equip themselves with the necessary processes and technologies to upgrade and meet the quality requirements in the international trade, consequently with globalisation and competition, nobody is waiting for anybody.

And to compete in a world economy, products and services must be speedily designed and precisely tailored to the needs of the customer. The recent crisis

in South East Asia was fall-out of the globalisation process, and Mauritius remained untouched since its market are still partly protected.

Despite the hiccups being faced by some developing countries in adjusting to the globalisation, experience in the past few years has brought out the truth that there is no alternative to globalisation.

What are the lessons for Mauritius

The biggest challenge, perhaps, is to remain competitive without compromising quality. To achieve consistent quality, the Mauritian manufacturing industry must go in for total automation and should not fall for any quick-fix solutions.

There are **six golden rules** that manufacturing industry should follow in order to proceed victoriously in the globalisation race are as follows:-

- ♦ **Better communication** :-Connecting to the global village
- ♦ **Improved product mix** :-Development with the help of all sophisticated tools computers and electronic communication can help reduce the cycle of time.
- ♦ **More skilled staff** :-Sustained training for them can do Wonders.
- ♦ **Quality management** :- Focus on products, not necessarily profit, team- work created in the working place.
- ♦ **Quick response** :- An efficient apparel supplier, lead time to be shortened dramatically.
- ♦ **Prompt delivery of goods** :- To ship the full at one stroke on time, reliability of the seller.

Mauritius has a very meager share in the export of manufacturing goods among global trade. But the potential is tremendous and the only way to boost

his share is to submit to the dictates of the winds of changes blowing across the trade during the ongoing process of globalisation.

Finally, the survival of Mauritian manufacturing rest upon themselves on how, they will innovate, investing in new technology and developing new strategies which could be useful or beneficial for them in the future, as the trade liberalisation and globalisation is just to the next door. The survey highlights the perceptions and interrelated its impact of measures, standard and key performance indicators, which are essential for the enhancement of the any organisation. Generally performance indicators help a business to distinguish the factors that create value. They can act as a catalyst for behavioural change and play a useful part in short-term and long-term planning of any operation. Another aspect of great concern is the customer service, which Mauritian industries are still in its infancy. Business process engineering is today the most comprehensive and radical approach for making step function changes in this critical area

And lastly, we formulate some key points that could assist the manufacturing industries in achieving their objectives or goals in short-term or long-term planning.

Summary of Findings

1. All firms investigated coming from different background and orientations. The data analysis is based on a global concept. Monitoring each firm closely, the research should be carried out in their respective fields to generate precise variables [data].
2. With the 35 firms responding out of 120 firms survey, thirty companies are Mauritian owned, follows with a joint venture amounting to three and finally we had two companies owned by foreigners.
3. As a matter of fact, most firms responding have a traditional Mauritian working culture.
4. In relation to corporate strategic plan, it is encouraging to notice that a high percentage [80 %] do have one.
5. Similarly, the approach to new technology seems to be well established in their corporate strategic approach with a score of 85.7 per cent.

6. We deduce that IT is considered as a key factor for improvement of performance for the firms, with an impressive score of 91.4 %, which is very encouraging.
7. IT is found on different levels of the organisation, which is very promising, such as the payroll, accounting, office automation, stock control and other purposes.
8. Moreover, new technology can be beneficial for the organisation with regard to stimulate economic growth, increase productivity, reduces wastes etc.
9. On training level, we noticed a wide range of occupation need to be trained adequately, with rapid technology driven force, therefore it is imperative to align workers with these changes occurring in their firms. With better-trained workers could result, an increase in productivity.
10. In relation to their strategic plan for the next five next years many options were listed to meet their objectives. Innovation stands as the priority to them, following other areas such as reducing costs, investing in new technology, etc .On certain steps neglecting training as a vital error, where the survival of the firms depend largely on a skilled work force to meet post GATT era.
11. Considering the survey, it has been noticed that firms are more or less concerned with the increase manufacturing / productivity as their main priority, whereas others objectives less accent are directed. As a matter of fact, they are more concerned with manufacturing strategies rather than profit motive, which stands as a positive steps to emerge as a winner in the future with a prospective mindset.
12. Production planning is one main criterion that manufacturing industries should consider as the main aspect of manufacturing strategy. Where quality management stands as a major criteria in production unit. Firms must consolidate its quality programme to achieve the certification of ISO 9000 as an added value for their credibility.
13. The monitoring system of the firms are carried out on various methods

such as benchmarking, re-engineering, prototype, which is quite obvious in the manufacturing environment. In the future they will have to change their strategic approach, where more emphasises should be directed towards research & development and innovation as the market trends keeps changing. With customers changing their purchasing behaviour, looking for quality goods at cheap price will be the catalyst factor.

14. Absenteeism seems not to be a major problem for the manufacturing industries responded to the survey where the figure varied accordingly to 5-6 per cent. Where some of the respondents attribute this situation as normal in the Mauritian context, as a result the situation is not that alarming as some pretend recently.

Recommendations

1. Since the future menacing global competition, the manufacturing industry has to combat with the entire three tiers that will form the basis of a winning strategy (a) investment (b) technology (c) marketing concept.
2. The Mauritian manufacturing industries must plan and initiate sound steps towards implementing Computer integrated Manufacturing [CIM] systems.
3. It is important for the manufacturing industry to equip itself with the necessary processes and technology to upgrade and meet the quality requirements in the international trade.
4. Initiative for productivity increase has to come from the management. An individual worker may work extremely well, or an engineer may be brilliant; but the maximum utilisation of their talents depends on the manner in which management plan their objectives, muster the necessary resources, implementing plans and co-ordinate the activities of various people in the organisation.
5. Modernisation will lead to better productivity and the same time better quality of goods produced.
6. Maintenance of good industrial relations is essential to increase productivity. This relation can exist only if the two parties-labour and management-are assured of independence and self-respect; if they accept

and implement a common code of behaviour towards each other and have a degree of mutual confidence and understanding.

7. Manufacturing now take place in a global economy and its development should be the formation of strategic alliance between companies [co-operative production agreements].
8. Manufacturing industries must prepared themselves towards customer-driven i.e. the future products will be required in a wider array of models and variations.
9. Manufacturing systems are required to develop environmentally benign products and processes.
10. Business or manufacturing organisational structures should focus on subcontracting in the sense of outside processing in order to meet capacity requirement or orders.
11. Manufacturing organisation supervisors work in a consultative rather than an authoritative environment for the beneficial for the firm.
12. The working population is becoming older and more experienced, and may have greater difficulty adapting to change. As business continues to restructure there will be fewer jobs for those who cannot read, write, communicate, compute or analyse. This is already happening. We will also have to educate employers to accept older workers, who with the right training can be as productive as the younger ones.
13. Becoming the best competitor. [Being better than almost every other company in your industry in at least one aspect of manufacturing].
14. Manufacturing firms must hiring and retaining the best people. [Having workers and managers who are so skilled and effective than other companies].
15. Being able to respond quickly and decisively to changing market conditions. [Being more quickly than one's competitors in responding to market shifts or pricing changes and in getting new products out into the market faster than they can].

16. The Internet is fast becoming an important new channel for commerce in a range of businesses-much faster than anyone would have predicted two years ago. Therefore, it is imperative the manufacturing industries should shrewd the use of this new technique to achieve competitive advantage.
17. A majority of manufacturing industries has viewed globalisation and liberalisation with skepticism from the word go. But what is deplorable is that the despair has to stay. Instead, the manufacturing firms should defied as a challenge and consolidate their manufacturing and marketing strategies as new opportunities are opening.
18. Accelerating technological change, heightened marketplace demands more aggressive global competition and shifts in workforce should be the mainstream of today manufacturing for their survival.
19. On friendly environment features, firms should not dump their waste and sludge, much of which contain heavy metals, into municipal landfill or bury it in their backyards. Surface and ground water could be polluted due to rising discharge of industrial waste.
20. The competitive delocalisation strategy process should pursue to take advantage of lower cost of production, as some already implanted in Africa.
21. Manufacturing industries have to play the game in order to survival as these days the supplier of products need to be faster on their feet and supply superior products, more quickly and effectively than before.
22. People in organisations need to able to learn new ways of doing and making things very rapidly as circumstance change suddenly/or rapidly.
23. To sustain competitiveness management must have a cost assurance and total quality management/ assurance system.
24. To reduce cost, it is crucial to use value engineering concepts and process to eliminate waste in planning, introducing cost reduction as a team activity that must be carried out continuously.

25. Eliminating wastage to reduce cost and adds value to product without capital investment to increase the firm turnover.
26. A factory must be configured equipped and staffed to provide the optimum response to the changing needs of the business and the fluctuating demands of the market place
27. While developing our manufacturing sector, we must sure that our agriculture sectors are not neglected. Instead, both sectors manufacturing and agriculture must strive for efficiency, modernity and competitiveness.
28. In a world of high technology Mauritian manufacturing firms cannot afford to lag behind. They must always try to catch up at least in those fields where they have certain advantages.
29. To have an economic growth, manufacturing firms have to produce high quality goods at cheapest rate to compete and seek a niche in the global market.
30. Manufacturing should incorporate total quality management in their corporate structure to achieve competitive edge.
31. Firms should set criteria to achieve ISO 9000 certification to compete in the global environment as this certification stands as an added value to their finishing goods.
32. It is fundamental for Mauritian manufacturing industries into joint venture or into partnership with foreign companies to attract their know-how and Foreign Direct Investment.
33. Successful strategy is the combination of three main component (a) developing multi-product, multi asset, multi investment (b) building up presence in key international market (c) adopting a regionalised marketing approach offering local product to local customers.
34. To achieve consistent quality, the manufacturing firms must go in for total automation and should not fall for any quick-fix solution.

35. Government should play and consolidate its role of facilitator to promote further Mauritian goods in order to acquire the new market with fiscal incentive.
36. Government should intensify its lobbying towards Africa and America in various economic forum and fair, to have easy access to their protectionism market such as recently with the Africa bill in the U.S.
37. It is imperative that manufacturing develop a research and development culture in the organisation, as innovation contribute to competitive edge.
38. Manufacturing industries must implement maintenance and review policy for their plant and equipment, as rapid change in technology, needs not to be underestimated.
39. Jumping onto the technological bandwagon too early could be costly; therefore, it is imperative to carry feasibility studies before.
40. The alignment of IT and Business strategies should be viewed as one-core competencies.
41. Attention should be made to stimulate the shift from labour intensive into higher value-added production as it could gradually lose competitiveness of some part of manufacturing sector.
42. Manufacturing should have a long sight vision in their dealings, as the national currency is very vulnerable to fluctuations. When, most of the raw materials for our manufacturing sectors are paid mainly in U.S. dollar.
43. It is vital to increase benefits from regionalisation with Mauritian products having preferential access to many South African countries through membership of COMESA and SADC.
44. Manufacturing firms must understand that they will not thrive in the modern village [global], if they do not improve continuously, adapt the Asian model or working culture to meet global challenge and increase productivity. Our industries will be lagging behind and their turn over will jeopardise.

45. A transformation conducive to globalisation is possible only when an atmosphere of teamwork has been created in the work place and the quick response concept, which is the very backbone of efficient supplier.
46. Investor in people is a potentially useful tool for developing Total Quality Management. It is not a TQM standard but could be useful marker along the road to total quality.