CHAPTER 7

CONCLUSION

7.1 Introduction

The main objective of this study is to identify the strategies that were adopted by public sector undertakings in Kerala to retain their competitiveness in the liberalised economic environment.

The specific objectives are to identify the strategies like downsizing, quality improvement, technology upgradation, customer care, human resource development programmes etc. adopted by the Public Sector Enterprises in Kerala to meet the challenges of the liberalised economy. Initiatives of the state PSEs in the identified areas were specifically analysed on the basis of the data collected from primary sources and from the response of the senior managers.

The data pertaining to the three profit making companies and the three loss making companies were collected and compared, to analyse the specific initiatives in the following areas to assess the impact of these factors on the competitiveness of the company as also the relevance of the same in maintaining continued competitive strength on a sustainable basis.

1. Technology Upgradation, product diversification and modernisation.
2. Productivity Factors
3. Information Technology
4. Research and Development
5. Manpower Restructuring
6. Marketing Strategies
7.2 Findings

The findings of the study in respect of each of the factors selected for determining competitiveness is detailed below.

7.2.1 Technology

The type of technology used by a manufacturer, the frequency of upgradation of the same and the speed with which new technologies are adopted and implemented and the competence to select the most appropriate technology are major factors that will contribute to the performance of a manufacturing organisation. Obsolete technology and outdated plants are major factors that arrest the growth and development of industries that do not have the right development perspective.

Data regarding various technology factors of the industries covered under the study revealed the following:

KMML is the first fully integrated Titanium Dioxide Pigment Plant in the world. KMML produces Titanium Dioxide Pigment through Chloride Process Technology. The technology was transferred through collaboration agreement with Benelite Corporation of America, USA, for the synthetic Rutile plant, with Woodall Duck Harm, UK, for the Acid Regeneration Plant and Kerr Mc Gee Chemical Corporation, USA, for Titanium Dioxide Pigment Plant.

The technology was continuously upgraded by KMML through indigenous R&D efforts and could respond to customer demands for better quality and could also retain its competitiveness through increased volume of production and better cost control measures.

Travancore Titanium Products Ltd. had the best technology available for production of Anatase grade titanium when the company was formed in 1946 and the unit was doing extremely well in terms of profitability but the plant and machinery was never updated in the last six decades of its existence.

The demand for Anatase grade titanium declined due to the subsequent availability of superior grade Rutile titanium.
The company failed to upgrade its technology or to produce better quality products or to diversify into other variants of titanium. The last expansion of the titanium pigment plant was carried out in 1973. Other than the improvements made for the sulphuric acid plant in 1980 and 1996 there was no major technology upgradation efforts in TTP.

Malabar Cements has state of the art, dry process technology for manufacture of superior quality cement. The company has its own raw material mine which is a significant factor for the competitiveness of this cement industry. The company has commissioned a 2.5 MW multi-fuel power plant in June 1998 which meets 25% of the total power requirement for the Walayar plant operations.

The company has updated its technical capability by adding new equipments like belt bucket elevators and by automation of kiln and modification to cement mill internals etc. Malabar Cements Limited has been continuously achieving clinker production and cement production above its installed capacity.

Travancore Cochin Chemicals had upgraded its technology to cope up with the changing trend but the challenge for the unit was the increasing power cost as the production process is power intensive.

While many other power intensive units in the private sector in Kerala started their own mini hydro electric projects TCC is not seen to have made any attempt in this direction.

Travancore Cements Ltd. had the best technology available for cement production when the unit came into existence in 1947. The technology supplied by M/s F.L.Smidth & Company Denmark was adopted in Travancore Cements Ltd.

There was no subsequent upgradation of technology at any point of time. The company did not take up any modernisation programme also for the plant. TCL was not able to use its full installed capacity due to various reasons including shortage of raw material. No serious attempt is seen made for developing alternate source of raw material. Though the high cost of power is a major
issue no action is being taken for putting up mini hydel power projects as done by similarly placed private sector units.

In Kerala State Drugs and Pharmaceuticals Ltd. the Vitamin A plant was started in 1980 with the free technology from Roche, Switzerland. The technology offered free was for manufacture of Vitamin A through the lemon grass root. The lemon grass root for production of Vitamin A was not followed elsewhere in the country and is not reported as technology feasible in Indian conditions.

The plant with an investment INR 15 crores could not be stabilised after repeated attempts. Finally the intermediary products were procured to produce Vitamin A in the plant. After all the attempts were futile the plant was closed down in 1980.

In the formulation plant also there was no technology upgradation since its inception in 1974. The current plant and machinery which is more than 30 years old are not suitable for production under the latest Good Manufacturing Practices (GMP) and hence there is no license for open marketing of its products. The unit now depends on exclusive supplies to government for its survival.

The above data regarding technology factors prove the hypothesis that advanced technology, timely upgradation of the available technology, product diversification and modernisation are critical factors that contribute for competitiveness of an industrial unit. Statistical analysis of the data collected from senior managers of the companies covered under the study also corroborates the above finding.

### 7.2.2 Productivity

Productivity improvement programmes through implementation of productivity agreements and improvements in machine productivity have helped many companies to shed excess employees from their rolls.

Productivity agreement was signed in KMML as part of long term agreement and a productivity incentive scheme was implemented accordingly. Machine
productivity was also improved through introduction of new equipments and machinery.

In Travancore Titanium Products Ltd., the Production of Anatase grade titanium started in 1946. The productivity in different plants of TTP was not reviewed from time to time. With strong trade unions having an upper hand, the reduction of manpower or enhancement of workload was not resorted to. The scope for improvement in machine productivity was also not assessed or implemented in the company. Improvements in fuel efficiency were also not taken up by the company seriously. Even simple corrective actions like replacing kerosene with diesel in the Calcinator were tried at a very late stage.

In Malabar Cements no productivity agreement was signed with the unions. However, the Company has made many attempts to enhance machine productivity.

Travancore Cements Ltd. has signed a memorandum of settlement on 27-01-1994 with the trade unions agreeing to the required strength of manpower in each category in all sections of the company. However this agreement is not revised even after sixteen years. Regarding machine productivity also no significant effort was made by the company.

In KSDP there was no serious attempt to increase the productivity of labour or machine through productivity agreements or by automation or modernisation.

In TCC the belated attempts in improving productivity as part of the turn around strategy had started showing results.

The above data regarding profit making and loss making PSEs in Kerala supports the hypothesis that, in a global market companies can compete only by balancing their productivity with that of global players. Data collected from selected respondents of the companies covered under the study agrees with the hypothesis.
7.2.3 Information Technology

Indian Industries are employing Information Technology in a strategic manner to achieve business objectives. The availability of large number of skilled manpower and technology at affordable prices facilitated this. A survey conducted by All India Management Association revealed that 55 per cent of the Indian companies have a stated IT strategy while 17 per cent are in the process of preparing the same.

Data regarding use of Information technology in Kerala PSEs was collected to understand the extend of application of IT tools in these industries.

The KMML had implemented ERP and works in a totally computerised environment.

In Travancore Titanium Products Ltd., no serious attempts were made to effectively use Information Technology tools for improving the operations or for enhancing efficiency in production or administration.

Malabar Cements has implemented Enterprise Resource Planning in the year 2007 at an approximate cost of 150 lakhs. M/s Keltron was the implementing agency for the SAP. The IT Department of the company which was started in 1998 has strength of three Officers and three staff who are responsible for maintaining the Computerization Programmes and the company spends ten to fifteen lakhs per year for the same.

In Travancore Cements Ltd. full computerization was not implemented and the company has not planned for introduction of ERP. However, partial computerization was done for pay roll, inventory etc.

TCC also has not developed IT systems to the full extent compared to KMML and MCL. In KSDP computerization efforts are minimal.

Of the six companies covered under the study only two profit making companies resorted to advanced IT techniques for quality improvement and productivity enhancement, thus agreeing with the hypothesis that the use of Information Technology tools in different fields of business will add to the
competitiveness of a firm for faster and accurate response to business challenges.

### 7.2.4 Research and Development

The importance given to research and development activities and the end result of the focus given on R&D programs can be evaluated only on the basis of the quantum of improvements or innovations that translate into commercially meaningful ideas. Hence data was collected from the companies covered under the study as to whether any research finding has turned into commercially viable product or improvement in technology or process. The amount spent by a Company on R&D is an indicator of its efforts to indigenize the technology and also to modernise the operations for higher efficiency and improved performance.

The R&D Department of KMML was established in the year 1984 and has helped the company to develop new products and to improve the quality of the existing products.

One of the major reasons for the turnaround of KMML after it was referred to BIFR, was the successful conversion of glass pipes to inconel pipes which could withstand high corrosion and high temperature based on in-house R&D work. KMML had spent above 200 lakhs per year for R&D during the period from 1995-96 to 1998-99 and also during 2000-01 and in 2001-02. The total amount spent by KMML on R&D during the period from 1996-97 to 2007-08 was Rs.1440 lakhs and no other PSE in Kerala had made similar investments in R&D.

One of the major success factors for KMML is the continuous effort that they are making for improving the operations through the Research and Development programmes taken up in specific areas.

The following research activities taken up by the company in the past five years points to the strategic approach of the company for developing indigenous capabilities for technology and quality upgradation, process improvement and cost reduction.
During the year 2003-04 the company initiated two research programmes. A new hydrophobic plastic grade pigment, RC-804 was developed by the company through inhouse R&D efforts. As part of their continuous efforts to improve the quality of existing products laboratory level studies for improvement of optical properties of RC-802 grade Tio2 and oil absorption which is a major cost factor in paint making, was initiated during the year. During 2004-05 two R&D projects were taken up as follows

a. New Product Development: Trial production of 36 MT of hydrophobic plastic grade pigment-804, taken successfully

b. Quality Improvement: Laboratory level studies completed for improving the optical properties of RC-802. In 2005-06 100 MT of New Hydrophobic plastic grade RC-804 was sold in domestic market.

In 2006-07 Plant trials were taken up for exploring the use of sodium chloride as scouring media during oscillation. Studies were also carried out during the year to check the efficiency of using charcoal as reductant in the illmenite beneficiation plant. Also lab scale studies were initiated for using titanium slag as feed material in chlorination. Studies aimed at ascertaining the capability for supplying RC-822 pigment for Asian Paints was initiated during this year. Plant trial for conversion of double leaching operation to single leaching in the digester of IBP Plant and weather ability studies to test the resistance of the material when exposed to severe atmospheric conditions were also initiated.

Though TTP was having an R&D set up since 1961 no project is seen to have materialized into commercially viable projects especially in development of different grades of pigment and development of colored pigments. The major product of TTP was anatase grade titanium which was preferred to superior quality Rutile grade because of the exorbitant price of the latter grade. Liberalization and consequent reduction of import duty of titanium brought down the price of Rutile grade Titanium at par with that of Anatase grade affecting the market potential of Anatase grade. No R&D project is seen taken up for promoting the use of Anatase grade in allied sectors like plastics
manufacturing nor could they extend application support for widening the scope of Anatase grade.

Malabar Cements Ltd. has not established an R&D Centre in spite of its growing performance and the financial resources to invest on Research & Development activities. The proposal to set up an R&D centre is long pending. The failure of the company to invest in Research & Development which is critical for the continued and sustained growth of the company which is not addressed by the various factors identified as competitive factors for the purpose of this study.

Travancore Cements had an R&D Department right from inception. The new variants of Shelcem Cement paint was introduced in 1977 and the Vembanad Wall putty was introduced in 2007 as a result of the indigenous R&D efforts. However, spending on R&D was a meagre amount i.e. Rs.2, 30,000/- during the last 5 years.

In KSDP there is no organized R&D set up for supporting the production or process activities.

Eighty per cent of the respondents from profit making units opined that R&D efforts contribute to their competitiveness which is shared by 60 per cent of the respondents from loss making units also. Statistical analysis showed significant correlation between R&D efforts and competitiveness, supporting the hypothesis that R&D efforts enable the organisation to become world class competitors.

### 7.2.5 Manpower Restructuring

Manpower restructuring through outsourcing and implementation of VRS schemes is a strategy widely adopted by companies world over for enhancing their competitiveness. Details regarding initiatives in this regard was collected from the units covered under the study.

In KMML though an attempt was made to reorganize the manpower deployment based on a scientific study, no VRS scheme was implemented.
However a scheme for early retirement of sick employees was implemented on individual basis.

In Travancore Titanium Products Ltd. though a VRS scheme was implemented, it was not worked out scientifically resulting in many sections continuing to have large number of excess employees than required for their optimum productivity.

Malabar cements has not implemented voluntary retirement scheme as they had no proposal to reduce manpower.

Travancore Cements Ltd. had done a study on VRS scheme and calculated the benefits that TCL could earn through implementing VRS Scheme. It was beneficial for TCL since after VRS, TCL planned to have no recruitment in the vacant positions but the company failed to get approval from the Government for implementation of VRS Scheme.

KSDP offered VRS Scheme to cut excess manpower. The strength of employees in KSDP which was 422 was brought down to the level of 201 in 2007-08, but this also did not help in turn around of the plant.

Data on manpower restructuring collected from the respondents representing the selected units show that 64 per cent of the respondents reported implementation of VRS in their companies supporting the hypothesis that implementation of VRS is a widely used strategy. However statistical analysis of the data did not reveal any relation between the VRS and competitiveness.

### 7.2.6 Marketing Strategies

In the transition from protected environment to the market oriented competing environment the major challenge for public sector undertakings was in marketing their products and in developing an appropriate strategy for the same. Brand image and brand loyalty are presumed to be significant factors for improving market share and for sustained competitiveness in a market driven economy.
KMML do not have many competitors in the domestic market since the suppliers of Rutile grade Titanium is limited. However they have developed proper marketing systems to capture the Global market making use of the liberalised economic environment and stands apart as the only PSE among the units covered under the study, benefited by the liberalisation policy.

The major failure of TTP was in marketing. Government of Kerala formed a company exclusively for marketing the products of TTP when the company had monopoly in Titanium market. This company did not add any value for the product but functioned as an agency for collecting commission for selling Titanium. They neither collected proper customer feedback nor made any contribution for improved sales. The packaging of the product was not up to market standards. Customer needs were not addressed properly and the company failed in developing a set of loyal customers. Regular customers were taken for granted when the product was in good demand.

Travancore Cements Ltd is having a marketing department which is functioning right from early years but could not withstand competition from new players like JK, Birla White etc due to various reasons. The company has not made any serious attempt to enter into export market. They also have a customer grievance handling system and has responded to 225 complaints during the last 5 years.

In the case of KSDP, though the Company had a direct marketing department it failed to compete with the pharmaceutical majors in booking orders and in commanding the right price from open market. Even the Government orders could not be by mobilised to the full extent by the company telling upon its inability in marketing efforts.

Profit making unit like Malabar Cement which has evolved as a market leader is not investing enough to build a brand which is popular or comparable to the brand names of private cement companies probably because of the current demand for their cement now which is more based on the present market condition.
TCC markets its products in India and has only a small marketing department for the same. They have not developed the marketing capability to be competitive in an open market. The company could not tap the potential of the Global market as done by KMML.

Seventy six percent of the respondents from profit making companies along with 61 percent from loss making units stated that they have a focused marketing strategy after 1996. But statistical analysis did not show any relationship between focused marketing strategy and competitiveness rejecting the hypothesis that marketing orientation contributes to competitiveness. However, data on sales realization shows significant relation between competitiveness and sales realization.

### 7.2.7 Quality Certificates

Maintaining an edge in quality as demonstrated by the quality certificate was presumed as a critical factor for the success in the liberalised business environment.

Of the six companies covered under the study five are having ISO 9000 Certification for their manufacturing facility whereas only 28 per cent of the respondents from profit making units feel that the quality of their product is of Global standards along with 22 percent from loss making units. Sixty per cent of the respondents from both profit making and loss making units reported that quality certificates were obtained after 1996. Eighty per cent of the respondents from profit making companies and seventy five percentage from loss making units reported having a system to address customer concerns regarding quality of their products.

### 7.2.8 Employee Involvement

Awareness of employees about changes in the economy and the threats to which the company is open because of the new business environment was presumed to be critical. Data collected from the respondents representing the companies showed significant relation between competitiveness and employee awareness, corroborating the hypothesis. Though awareness among
employees was statistically significant success depends on translating that awareness into action through involvement. The involvement of employees was good or very good at 68.23 per cent among profit making companies and 49.99 per cent in loss making companies.

In addition to the above, the study has found the following factors significant in building competitiveness for public sector units in Kerala on the basis of statistical analysis of the data collected from the senior executives of the units through questionnaire.

1. Timely actions initiated for improvement and maintenance of plant and machinery against closure and discontinuance.
2. Strategic decisions taken for introducing new products or new product variance.
3. Attention given by the management on research and development activities.
4. Management capability to translate results of R&D into commercial proposals.
5. Introduction of schemes for recognizing innovations and suggestions of employees at different levels for improvement of operations.
6. Continuous efforts for increased machine/labour productivity.
7. Knowledge of employees at all levels about the market share of the product.
8. Effectiveness of the system for timely sales realization against large outstanding and credits.
9. Management orientation towards improving exports by exploiting the opportunities offered by the liberalised economic environment.
10. Continuous and effective communication for creating awareness among employees about changes in the economy and the consequential threats to the organisation.
However, it is also found that:

1. Changes in technology were not a major factor that contributed to competitiveness.

2. Capacity enhancement was not a major factor that contributed to competitiveness.

3. Plant modernisation was not a critical factor for profit making units.

4. Use of IT tools was not a salient feature of the profit making companies though it did contribute for their success.

5. Productivity agreements implementation of VRS schemes were presumed as important factors that contributed to sustained competitiveness. However, data collected from various PSEs did not corroborate the same.

6. Having separate marketing departments, focused marketing strategies for addressing customer complaints, and brand building were considered very crucial for the success of the PSEs in the liberalised market driven economy. However, that was not found relevant based on the data collected for the study.

7. Involvement of employees in the overall performance of the organisation and their active participation through the suggestion schemes and the implementation of such suggestions of the workers were also considered as important factors for the success of the organisation. However, this was not supported by the data collected.

### 7.3 Suggestions

For an organisation to remain competitive, a large number of factors are to be maintained and closely monitored on a regular basis. In a liberalised, market driven economy, managements of organisations should keenly and closely evaluate each and every aspect of these factors to ensure that they remain competitive. Appropriate technology to produce quality products, right people to
man the various functions, timely sourcing of required raw materials, identifying customers and marketing the products to them at optimum price are the key factors for the success of a commercial organisation.

1. Among the six companies covered under the study two profit making units do have certain systems at par with what is followed by successful companies but that again is not developed on a planned basis but has evolved over time. Based on the findings of this study it is suggested that a Corporate Plan exercise may be done for both these units to assess and update their competency factors.

2. The failure of companies like TTP and TCS are mainly due to the inordinate delay in taking corrective actions like technology upgradation and diversification before the unit became sick. A detailed long term Business Plan may be prepared with the help of experts for revamping the operations of these two units.

3. Even after being in existence for over 30 years MCL do not have an R&D Department which could have supported the organisation in upgrading product quality, in bringing out new variants of cement or in bringing down cost of production. An R&D Department with most modern facilities may be formed in MCL to support the production and quality departments and to address the emerging customer demands.

4. For KSDP, the unit lacks competitiveness in almost all the factors like appropriate technology, R&D support, product diversification, and market orientation and employee awareness. A detailed Business Plan need to be prepared for the restructuring and diversification of this unit.

5. For Travancore Cements Ltd. the introduction of product variant took place at a very late stage and before the new variants could pick up market the production of the base product ie white cement has run into problem because of shortage of raw material. Company management had failed to identify alternate raw material well in advance even after knowing that the source of the only raw material was depleting fast. A Revamping
Programme may be taken up for this unit with the help of experts who can recommend alternate raw material source or diversification programmes.

6. TTP had the best technology when they started the unit in 1946 and the unit was doing extremely well in terms of profitability but the plant and machinery was never updated in the last six decades of its existence. The technology of producing Titanium in the sulphur route itself has become outdated and new technologies are available which should have replaced the obsolete technology which generates lot of effluents and the disposal of these effluents have become a critical issue for the survival of this unit.

It is understood that the government is seriously looking at major corrective actions which involves establishment of an Effluent Treatment Plant system at an approximate cost of Rs.75 crores against an earlier proposal for 275 crores and also to amalgamate the unit with Kerala Minerals and Metals Ltd. The amalgamation with KMML will bring synergy by way of better R&D support and common marketing opportunities. This proposal envisages the support of R&D and marketing from KMML for strengthening TTP. It is suggested to implement this proposal at the earliest.

The successful implementation of the abovementioned suggestions are subject to the following limitations:

1. The interference of the Government in policy matters and their influence in the decision making process through Administrative Departments and through appointment of Government nominees in the Board of Directors with veto power.
2. Government restrictions in investments and collaborations with private technology providers and with foreign companies.
3. Short tenure of Chief Executives and their appointments on the discretion of political leaders. Incompetent and inexperienced candidates getting selected as CEOs and the failure of Government machinery for attracting and selecting competent candidates as CEOs.
To deal with the above limitations it is suggested to empower the Board of Directors of the companies with more autonomy to take independent business decisions in the best commercial interest of the organisation.

7.4 Conclusion

The data collected from the units covered under the study on analysis corroborated the hypothesis that application of advanced technology, timely upgradation of technology, product diversification and modernisation are critical factors that contribute for competitiveness. Increased volume of production and introduction of new products or product variance are also critical success factors. Giving importance to R&D activities and translating R&D results into commercial proposals are also critical in building competitiveness.

Public sector enterprises in Kerala do have the strength to be competitive as demonstrated by companies like Kerala Minerals and Metals Ltd and Malabar Cements Ltd. However even these companies have not evolved a formal system for addressing the emerging threats in the business environment on a continuous basis. An annual corporate plan exercise should be made compulsory for all Public Sector units.

To ensure that the public sector companies in Kerala remain competitive, a regular monitoring mechanism should be developed by the Government to review their competitiveness on a long term sustainable basis against the current annual review of profits only.

7.5 Scope for Further Research

The researcher would like to suggest further research work in the following lines. This study was limited to the industries in the chemical sector only and has not considered sector specific factors. Hence further research could be initiated in respect of other sectors or covering all sectors.

Only the selected factors regarding the strategies adopted by the units for building competitiveness was covered in the study. Management capability and initiatives were not covered in the study but are also critical in the success of
industrial units and hence a separate study could be initiated on the role of Chief Executives in building competitiveness for Public Sector units.

In the Kerala context, the role of trade unions and their leaders are crucial in the success of an industrial undertaking especially for those in public sector. This study has revealed higher level of involvement of workers especially in loss making units and the role of trade unions in the competitiveness of a public sector could be a separate topic for study.

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