

## 10. INDEPENDENT INDUSTRY ASSESSMENT REPORT

(Prepared for inclusion in this Prospectus)



### VITAL FACTOR CONSULTING

Creating Winning Business Solutions

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18<sup>th</sup> July 2003

The Board of Directors  
Luster Industries Bhd  
Lot 58 & 59, Bakar Arang Industrial Estate  
08000 Sungei Petani  
Kedah  
Malaysia

Dear Sir/Madam

### Assessment of the Plastic Injection Moulding Industry in Malaysia

The following is an extract of the Assessment of the Plastic Injection Moulding Industry in Malaysia prepared by Vital Factor Consulting Sdn Bhd for inclusion in the Prospectus of Luster Industries Bhd (herein together with its subsidiaries will be referred to as Luster Group) in relation to its listing on the Main Board of the Kuala Lumpur Stock Exchange.

#### 1. Background

- The objective of this report is to provide an independent assessment of the Plastic Injection Moulding Industry in Malaysia.
- Luster Group is an integrated manufacturer of high precision and precision plastic parts and components. Its business activities include the following:
  - Design and fabrication of mould and die;
  - Manufacture of high precision mechanisms and components;
  - Manufacture of precision plastic parts and components;
  - Printed circuit board assembly (PCBA);
  - Research and development;
  - Sub-assembly and full assembly of plastic parts and products.
- For the financial year ended 31<sup>st</sup> December 2002, Luster Group's revenue amounted to approximately RM130.6 million.

#### 2. Overview of the Industry

##### Processes of Manufacturing Plastic Products

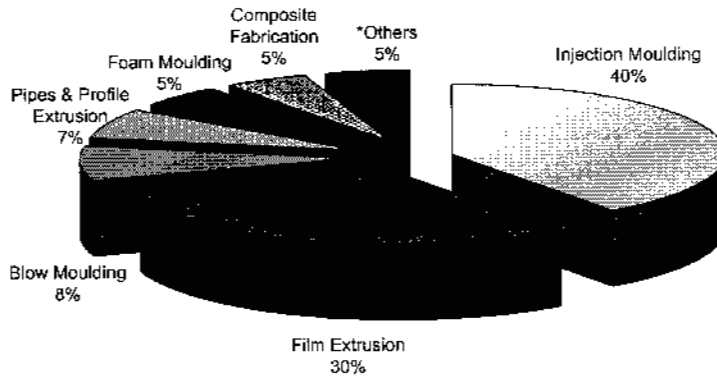
- According to the Malaysian Industrial Development Authority, the Manufacture of Plastic Injection Moulded Products is categorised under the umbrella of the Plastics Industry. Plastic Injection Moulding is one of the processes that are used to manufacture Plastic Injection Moulded Parts and Components.

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- Generally, the Plastic Products Industry can be segmented by different types of processes as depicted below:



*\*Others include lamination, calendering, yarn extrusion, rotational moulding and sheet extrusion.*

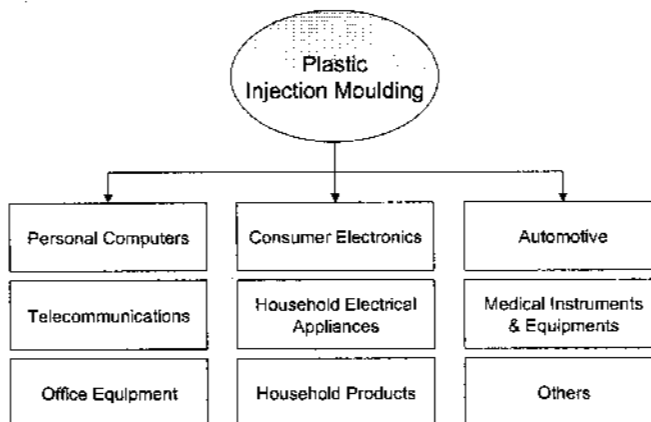
*Source: Malaysian Plastics Manufacturers Association*

**Figure 1 Plastics Industry Segmentation by Processes based on Production Output in 2002**

- Injection moulding represented the largest Plastics processing sub-sector accounting for 40% of the total processing of Plastics Products in 2002 (*Source: Malaysian Plastics Manufacturers Association*).
- Within the Plastic Injection Moulding Industry, there were approximately 500 manufacturers of Plastic Injection Moulding in Malaysia in 2002 (*Source: Malaysian Plastics Manufacturers Association*).

**End-user Sectors within Plastic Injection Moulding Industry**

- Some of the end-user sectors within the Plastic Injection Moulding industry is segmented into the following:



**Figure 2 Structure of the Plastic Injection Moulding by End-User Sectors**

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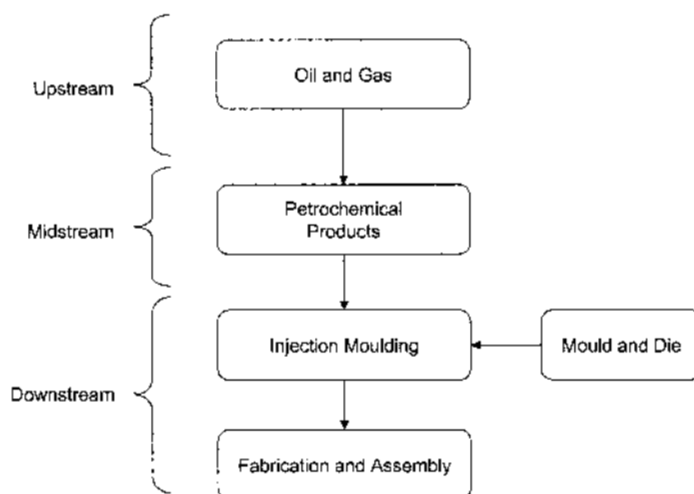
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- The end-user sectors of Plastic Injection Moulding include personal computers, consumer electronics, household electrical appliances, telecommunications, office equipment, automotive, medical instruments and equipment, household products and others.

### 3. Vertical Structure

- The vertical structure of the Plastic Injection Moulding is as follows:



**Figure 3 Vertical Structure of Plastic Injection Moulding**

- The Manufacture of Plastic Injection Moulding can be segmented in the following manner:
  - Upstream;
  - Midstream;
  - Downstream.
- Luster Group's activities are within the downstream, encompassing:
  - Design and fabrication of mould and die;
  - Manufacture of high precision mechanisms and components;
  - Manufacture of precision plastic parts and components;
  - Printed circuit board assembly (PCBA);
  - Research and development;
  - Sub-assembly and full assembly of plastic parts and products.

#### Upstream

- Upstream activities primarily involve the exploration and production of crude oil and gas.

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- As at 1<sup>st</sup> of January 2003, Malaysia has about 3.2 billion barrels of crude oil reserves and about 87.5 trillion standard cubic feet of gas reserves (*Source: Petronas*).

**Midstream**

- Midstream activities comprise the refining of petrochemicals including plastic resins, methanol, acetic acid, acrylic acid, oxo-alcohols, aromatics, purified terephthalic acid, fatty acids and fatty alcohols;
- In 2001, total proposed capital investment in Malaysia's petroleum products including petrochemicals totalled RM110.1 million (*Source: Malaysia International Trade and Industry Report 2001, Ministry of International Trade and Industry Malaysia*).

**Downstream**

- Plastic Injection Moulding is part of the downstream activities. Other downstream activities consist of design and fabrication of mould and die, manufacturing and assembly.

**4. Government Legislation, Policies and Incentives**

- Apart from the normal manufacturing licence, there are no material government laws, regulations and policies that may impede on the performance and growth of operators within a free enterprise environment.

**Government Incentives**

**Pioneer Status**

- The major incentives for companies investing in the manufacturing sector are:
  - Pioneer Status;
  - Investment Tax Allowance;(*Source: Malaysian Industrial Development Authority*)
- Eligibility for either the Pioneer Status or Investment Tax Allowance will be determined according to the priorities termed as "promoted activities" or "promoted products". In addition, the level of value-adding, technology and industrial linkages will also be taken into consideration.
- The eligible manufacturers of Pioneer Status are entitled to the following incentives:
  - 5-year partial exemption from the payment of income tax;
  - only need to pay tax 30% of statutory income with the exemption period commencing from "Production Day" (*Production Day is defined as the day production level reaches 30% of capacity*);(*Source: Malaysian Industrial Development Authority*)

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#### Licensed Manufacturing Warehouse (LMW)

- As part of the Malaysian Government's incentives to promote the manufacturing industry, LMW companies are entitled to exemption of importing raw materials, component parts, machinery and equipment, which required directly in the manufacturing process. (*Source: Malaysian Industrial Development Authority*)
- Generally, manufacturers who are approved for LMW are those that have the following:
  - not less than 80% of productions are meant for export;
  - raw materials/components are mainly imported.
 (*Source: Malaysian Industrial Development Authority*)

#### Environmental Regulations

- The disposal of wastes and sludge resulting from the plastic injection moulding process will fall under the Environmental Quality (Scheduled Wastes) Regulations 1989 (*Source: Environmental Quality Act and Regulations*).

#### 5. Labour Usage

- In comparison to the Overall Manufacturing Industry, the manufacture of Plastic Products sector utilised 2.7 times more labour for each Ringgit of sales generated (*Source: Monthly Manufacturing Statistics, December 2002, Department of Statistics Malaysia and Computed by Vital Factor Consulting Sdn Bhd*).

#### 6. Supply and Supply Dependencies

- The main supply dependencies for the Plastic Injection Moulding Industry is resin. These include commodity and engineered resins depending on the requirements and grade of performance of the Plastic Injection Moulded Parts and Components.
- Most of the resins are available from local producers with the exception of engineered resins. These are primarily imported from a number of source countries overseas.
- Some of the main types of resin used in a typical Plastic Injection Moulding include:
  - Polystyrene
  - Polyethylene
  - Polypropylene
  - Polycetals, other Polyethers and Epoxide Resins
  - Polycarbonate, Alkyd Resins, Polyallyl Esters and other Polyesters
  - Acrylic polymers.

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- Of these, Polycetals, other Polyethers, Epoxide Resins and Polycarbonate, Alkyd Resins, Polyallyl Esters and other Polyesters and Acrylic polymers are imported.
- In 2002, the annual production capacity for all types of Plastic resin is approximately 2 million tonnes.
- In 2002, production capacities for some of the Plastic resins in Malaysia is depicted in the following table:

PLASTIC RESINS	CAPACITY
Polypropylene	410,000 tonnes
Polyethylene	1,000,000 tonnes
Polystyrene	140,000 tonnes
Polyvinylchloride	230,000 tonnes
Acrylonitrile Butadiene Styrene	170,000 tonnes
Polyethylene Terephthalate (PET)	30,000 tonnes

Source: Malaysian Plastics Manufacturers Association

**Figure 4 Manufacturing Capacities of Plastic Resins in Malaysia**

- In 2002, the sales value of Synthetic Resins, Plastic Materials and Man-made Fibre except Glass increased by 9.6% to RM5.8 billion (based on 30 establishments with more than 30 employees). Between 1998 and 2002, sales value of Synthetic Resins, Plastic Materials and Man-made Fibre except Glass grew at an average annual rate of 13.2% (Source: *Monthly Manufacturing Statistics, December 2002, Department of Statistics*).
- In 2002, the production quantity of Polystyrene increased by 22.0% to reach 177,868 tonnes. Production quantity of Polystyrene grew at an average annual rate of 8.0% between 1998 and 2002 (Source: *Department of Statistics*).
- In 2002, the import value of Polymer of Styrene in primary forms increased by 13.2%. However overall, import value of Polymer of Styrene in primary forms grew at an average annual rate of 8.1% between 1998 and 2002 (Source: *Monthly External Statistics December 1999 and 2002, Department of Statistics Malaysia*).
- In 2002, the production quantity of Polyethylene grew by 17.3% to reach 993,569 tonnes. Production quantity of Polyethylene grew at an average annual rate of 26.0% between 1999 and 2002 (Source: *Department of Statistics*).

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- In 2002, the import value of Polymer of Ethylene in primary forms increased by 12.0%. The import value of Polymer of Ethylene in primary forms grew at an average annual rate of approximately 11.0% between 1998 and 2002 (*Source: Monthly External Statistics December 1999 and 2002, Department of Statistics Malaysia*).
- In 2002, the import value of HDPE Resin increased by 6.4% to RM318.5 million. Import value of HDPE Resin grew at an average annual rate of 11.4% between 1998 and 2002 (*Source: Department of Statistics*).
- In 2002, import value of LDPE Resin increased by 9.1% to RM326.5 million. Between 1998 and 2002, the import value of LDPE Resin grew at an average annual rate of 6.0% (*Source: Department of Statistics*).

#### 7. Demand and Demand Dependencies

- The usage and applications of Plastic Injection Moulded Parts and Components are extensive and diverse. Some of its end-user industries include the following:
  - **consumer electrical products** such as audio-visual products;
  - **household electrical appliances** such as refrigerators, toasters, microwave ovens and washing machines;
  - **telecommunications equipment** such as mobile phones, telephones, telecommunication devices and satellite receivers;
  - **computers and peripherals** such as personal computers, notebooks, keyboards, monitors and modems;
  - **office equipment and machinery** such as photocopy machines, typewriters, accounting machines and stencil duplicating machines;
  - **automotive products** such as passenger and commercial vehicles, motorcycles and scooters;
  - **medical instruments and equipment** such as instruments and appliances used in the medical, surgical, dental or veterinary practice or science, for example ophthalmic instruments and needles;
  - **household products** such as kitchenware, buckets and garbage bins.
- The diversity in applications and user industries will continue to provide continuing demand and opportunities for operators within the Plastic Injection Moulding Industry.

#### 8. Competitive Nature and Intensity

- Operators in the Manufacture of Plastic Injection Moulded Parts and Components Industry face **normal** competitive conditions.

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- As with most free enterprise environments, competition is based on a number of factors, including:
  - Quality products and services
  - Cost competitiveness
  - Prompt delivery schedules
  - Manufacturing capabilities and capacities
  - Customer convenience.
  
- There are many types of operators within the Manufacture of Plastic Injection Moulded Parts and Components Industry in Malaysia. Some of these operators focus mainly on the electrical and electronics industry whilst others concentrate on household products, medical instruments, automotive parts or a combination of these products.
  
- Generally, competition among operators in the Manufacture of Plastic Injection Moulded Parts and Components Industry within Malaysia is **intense**. However, there are different levels of competitive intensity depending on the sectors of the market served. This is based on the following observations:
  - In 2002, there were approximately 500 manufacturers of Plastic Injection Moulded Parts and Components (*Source: Malaysian Plastics Manufacturers Association*). Thus, the sheer number of operators in the market contributes to the intensity of competition.
  - However intensity of competition is dependent on the product categories as there is a wide proliferation of Plastic Injection Moulded Parts and Components for a diverse range of industries including, among many others, electrical appliances, air-conditioners, toys, home electronics, telecommunications, office automation, automotive and personal computers, medical instruments. Some of the operators would focus on manufacturing parts for certain industry sectors for example household plastic products, kitchenware, bathroom and toilet products, automotive parts and toys.
  - Competitive intensity would also be dependent on the complexity of the end-products for example basic plastic parts for toys would face the most competition as it is the least complex in terms of manufacturing process. Complex products such as certain electronics and electrical products would require additional processes and a higher quality of finishing whereby only certain larger operators with the appropriate machinery and equipment are able to fulfil.
  - In addition, companies that focus on value-added or high precision Plastic Injection Moulded Parts and Components that require strict adherence to quality and specifications face less competition compared to the manufacturers of basic Plastic Injection Moulded Parts and Components.
  - Operators that are able to provide a total solution by having integrated manufacturing capabilities such as mould design and fabrication, manufacturing, PCBA and assembly will differentiate significantly from other operators that focus mainly on manufacturing of Plastic Injection Moulded Parts and Components.



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#### 9. Key Players in the Industry

- There were approximately 500 operators within the Plastic Injection Moulding Industry in Malaysia in 2002 (*Source: Malaysian Plastics Manufacturers Association*). Some of the larger operators include:
  - Luster Industries Bhd;
  - VS Industries Berhad;
  - Rapid Synergy Berhad;
  - Changhuat Corporation Berhad;
  - HIL Industries Berhad;
  - LKT Industrial Berhad.
  - JPK Holdings Berhad;
  - May Plastics Industries Berhad;
  - Precico Sdn Bhd;
  - Juason Plastics Sdn Bhd;
  - Advance Plas Industries (M) Sdn Bhd;
  - TFP Precision Industries Sdn Bhd;
  - Cosmoplas Industries (M) Sdn Bhd;
  - Ace Polymers Industries Sdn Bhd;
  - S.P.I Plastic Industries (M) Sdn Bhd.

#### 10. Barriers to Entry

- Apart from the normal manufacturing licence, there are no other Government regulations prohibiting the entry of operators into the Plastic Injection Moulding Industry.

#### Capital and Set-up Costs

- The barriers to entry based on capital requirements excluding land and building are **low**.
- This is predicated by the fact that in 2002, there were approximately 500 operators in the Plastic Injection Moulding Industry and these were predominantly smaller players. (*Source: Malaysian Plastics Manufacturers Association*).
- The capital cost of setting-up a small-sized manufacturing plant would cost approximately RM600,000 (excluding land and building). This would incorporate the following:
  - 2 injection moulding machines for 160 tonnes and 240 tonnes respectively;
  - 2 auto loader and crusher;
  - 2 robotic arm machines.

(*Source: Luster Group*)

At this level of entry, production would only be semi-automated and therefore highly dependent on labour for manual processing. Production for this small sized manufacturing plant would also be limited.

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- There is a need to reach a certain size in order for the operator to benefit from economies of scale.
- As an integrated manufacturer, it would require approximately RM75 million to set-up a highly automated plant with facilities similar to Luster Group. The costs would comprise the following:
  - approximately 46 units of machinery and equipment for the fabrication of mould and die;
  - approximately 126 units of injection moulding equipment and machinery between the range between 25 tonnes and 650 tonnes for the manufacture of Plastic Injection Moulded Parts and Components;
  - approximately 28 units of Surface Mount Technology (SMT) machines, Radial, Jumper, Sequencer and Axial machines and 4 manual insertion lines and 3 assembly lines;
  - approximately 24 assembly lines which comprised a combination of automated and semi-automated silk screening, spraying and printing machines, and equipment for the assembly division.

*(Source: Luster Group)*

An integrated manufacturing plant at the above-mentioned cost of investment is able to generate a turnover of approximately RM130 million.

#### Technical Skills and Knowledge

##### Mould and Die Design and Fabrication

- The level of technical skills required in the design and fabrication of mould and die would form some barriers to entry into the Plastic Injection Moulding industry. Although this process can be sub-contracted to external suppliers, it is important to have this technical expertise in-house.
- Ultimately, the quality of the output from Plastic Injection Moulding is dependent on the actual mould. As such, it is advantages to have design and mould fabrication undertaken in-house.
- The design of the mould will also have an effect on minimising wastage during the manufacturing process. Thus, a well designed and high quality mould will enhance and increase the productivity and efficiency of output.
- Mould and die play a critical supporting role to the Plastic Injection Moulding industry and operators with their own mould and die facilities will be able to add value to the customer by providing the front-end of the mould design and fabrication component. More importantly, this will help to maintain a high level of product quality in the manufacturing of Plastic Injection Moulded Parts and Components.

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**Technical Expertise and Experience in the Manufacturing Process**

- There is a certain level of technical expertise and experience in the manufacturing of Plastic Injection Moulded Parts and Components particularly in complex products that require high-end surface finishing or products for Multi National Corporations (MNC) that requires a certain standard of quality.
- These requirements would form some barriers to entry for new entrants. Some of the areas where technical skills and experience are required include:
  - mixture of the different types of commodity and engineered plastic resins to achieve the desired properties, durability and strength of the parts and components;
  - secondary processes to achieve the desired effects such as colour, gloss, matt, shiny and other types of appearances;
  - increase efficiency and volume of production while maintaining quality by continually improving on processes;
  - the ability to meet the needs of globally reputable MNC customers by producing the Plastic Injection Moulded Parts and Components that adhere to the specifications of these customers.

**Research and Development**

- Research and development activities are an important component in the Plastic Injection Moulding Industry. To gain a competitive edge, operators have to undertake research to monitor new and emerging trends in customer preferences, new materials, new technology and developments in processes and use the results to assess the implications and impact on existing manufacturing operations.

**Track Record**

- Track record is one of the critical success factors for operators in this industry as a new entrant without any track record is unlikely to be competitive in this market particularly with MNC customers.
- As Plastic Injection Moulding is regarded as a critical part of the total manufacturing process, track record, quality and service are critical factors in securing a manufacturing contract with MNC.
- In fact, MNC prefer to deal with operators who have track record in meeting customer requirements like quality, cost, delivery, service, speed and technology. It is not unusual for a new operator to undergo a gestation period of six months to a year before regular firm orders are given by the MNC.
- As such, this would pose as a barrier to entry for new entrants.

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**11. Barriers to Exit**

- Barriers to exit for the Manufacturing of Plastic Injection Moulding Industry are **low**.
- The machines used may be sold to other operators within the Plastic Injection Moulding Industry.

**12. Industry Life-Cycle, Outlook and Growth Forecast**

- The outlook for the Plastic Injection Moulding Industry is **favourable**.
- The Plastic Injection Moulding Industry is forecasted to grow at approximately **6% to 8%** per annum for the next five years.

**Supporting Factors for Positive Growth**

- The following factors and observations in local production and end-user industry performances provide support for the growth forecast:

**Local Production**

- In 2002, the turnover of the Plastics Industry increased at an estimated 3.5% and amounted to RM8.8 billion. Between 1998 and 2002, turnover of the Plastic Industry grew at an average annual rate of 8.7% (*Source: Malaysian Plastics Manufacturers Association*).
- Between 1998 and 2002, sales value of the Manufacture of Plastic Products not elsewhere classified grew at an average annual rate of 15.4% (based on 338 establishments with more than 50 employees) (*Source: Monthly Manufacturing Statistics, December 2002, Department of Statistics Malaysia*).
- In 2002, sales value of the Manufacture of Plastic Products not elsewhere classified increased by 9.8%, amounting to RM8.0 billion (based on 338 establishments with more than 50 employees).
- The following table is an analysis of the performance of sub-sectors under the umbrella of Plastic Products between 1997 and 2001, and for the first seven months of 2002.

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	Avg Annual Growth Rate Between 1997 and 2001 (%)	Growth Rate for First 7 Months of 2002* (%)	Amount in 2001 (tonnes/units /RM)
<b>Plastic components for radio and TV</b>			
Production Quantity	8.8	-32.9	2.0 billion units
Sales Quantity	8.2	-33.9	2.0 billion units
Sales Value	13.8	-21.4	RM1.2 billion
<b>Plastic casing and parts for radio and TV</b>			
Production Quantity	17.1	-18.7	478.6 million units
Sales Quantity	16.5	-21.9	405.6 million units
Sales Value	17.3	-36.0	RM458.8 million
<b>Plastic Parts and Accessories for motor vehicles</b>			
Production Quantity	16.9	68.7	191.2 million units
Sales Quantity	21.1	81.9	195.0 million units
Sales Value	12.0	26.9	RM592.2 million
<b>Industrial/electrical/electronic plastic parts</b>			
Production Quantity	77.6	-7.4	2.8 billion units
Sales Quantity	94.1	-4.6	2.5 billion units
Sales Value	52.9	-18.8	RM908.8 million
<b>Plastic household wares</b>			
Production Quantity	4.8	21.3	32,915 tonnes
Sales Quantity	7.4	42.2	31,898 tonnes
Sales Value	4.3	-12.0	RM110.2 million
<b>Household plastic containers</b>			
Production Quantity	44.6	42.9	12,352 tonnes
Sales Quantity	46.0	35.8	13,104 tonnes
Sales Value	32.0	11.4	RM68.0 million
<b>Industrial plastic containers</b>			
Production Quantity	48.1	53.4	27,594 tonnes
Sales Quantity	65.9	34.7	26,279 tonnes
Sales Value	44.6	6.2	RM143.0 million
<b>Plastic tableware and kitchenware</b>			
Production Quantity	33.1	-43.3	7,350 tonnes
Sales Quantity	29.4	-0.4	5,870 tonnes
Sales Value	21.7	7.7	RM40.0 million
<b>Plastic toys</b>			
Production Quantity	3.6	87.7	4,926 tonnes
Sales Quantity	16.8	-21.4	6,929 tonnes
Sales Value	15.4	-40.6	RM52.1 million

Source: Department of Statistics

\*Growth rate is for the first seven months of 2002 compared to the same period in 2001

**Figure 5 Performance of Selected Plastic Products**

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**Performance of End-user Industries**

- As part of the growth of the Plastic Injection Moulding Industry is also dependent on the performance of its end-user industries, the following is an analysis of the performance in some of these sectors:

**Local Production**

- Between 1998 and 2002, output of the Electronics Industry recorded an average annual growth rate of 5.1% to reach RM126.4 billion in 2002;
- Between 1998 and 2002, output of the Electrical Industry increased at an average annual rate of 9.5% to reach RM9.9 billion in 2002;

*(Source: Malaysian Industrial Development Authority);*

- Between 1998 and 2002, the ex-factory sales value of the Manufacture of Radio and Television sets, Sound Reproducing and Recording Equipment increased at an average annual rate of 3.1%, amounting to RM28.0 billion in 2002;
- Between 1998 and 2002, the production volume of Television sets increased at an average annual rate of 6.9% to reach 10.5 million units in 2002;
- Between 1998 and 2002, the production volume of Radios decreased at average annual rate of 7.8% to reach 21,884 units in 2002.

*(Source: Monthly Manufacturing Statistics December 2002, Department of Statistics Malaysia);*

**Recorders/Cassette/Cartridge Players including Tape Deck**

For the first seven months of 2002, the sales value of Manufacture of Recorders/Cassette/Cartridge Players including Tape Deck decreased marginally by 1.9%.

Between 1997 and 2001, the sales value of the Manufacture of Recorders/Cassette/Cartridge Players including Tape Deck grew at average annual rate of 18.2% to reach approximately RM1.1 billion in 2001;

For the first seven months of 2002, the production volume of the Manufacture of Recorders/Cassette/Cartridge Players including Tape Deck increased significantly by 1.5% to reach approximately 1.4 million units. Between 1997 and 2001, the production volume of the Manufacture of Recorders/Cassette/Cartridge Players including Tape Deck grew at average annual rate of 0.2%.

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**Compact Disc Players**

Between 1997 and 2001, sales value of the Manufacture of Compact Disc Players grew at average annual rate of 58.9% to reach approximately RM4.1 billion in 2001;

For the first seven months of 2002, the sales value of the Manufacture of Compact Disc Players decreased by 17.6% amounting to approximately RM1.9 billion compared to RM2.3 billion for the same period in 2001;

Between 1997 and 2001, the production volume of Manufacture of Compact Disc Players grew at average annual rate of 24.5%. For the first seven months of 2002, the production volume decreased by 10.6% to reach approximately 7.3 million units.

**Mini Compo**

For the first seven months of 2002, the sales value of the Manufacture of Mini Compo declined by 39.7% amounting to approximately RM580.7 million compared to RM963.7 million for the same period in 2001;

However, between 1997 and 2001, the sales value of Manufacture of Mini Compo grew at average annual rate of 7.2%;

Between 1997 and 2001, the production volume of Manufacture of Mini Compo grew at average annual rate of 9.5%. For the first seven months of 2002, the production volume decreased by 60.3% to reach approximately 1.8 million units.

*(Source: Department of Statistics Malaysia)*

- The ex-factory sales value of the Manufacture of Office, Computing and Accounting Machinery grew at an average annual rate of 1.6% between 1998 and 2002;
- Between 1998 and 2002, the ex-factory sales value of the Manufacture and Assembly of Motor Vehicles grew at an average annual rate of 35.7%, which amounted to RM12.4 billion in 2002;
- In 2002, the ex-factory sales value of Manufacture and Assembly of Motor Vehicles increased by 5.8% to RM12.4 billion compared to RM11.7 billion in 2001;
- Between 1998 and 2002, the ex-factory sales value of Manufacture of Professional and Scientific and Measuring and Controlling Equipment, not elsewhere classified, increased at an average annual rate of 5.0% which amounted to approximately RM535.7 million in 2002 (based on 4 establishments with more than 30 employees);

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- In 2002, the ex-factory sales value of the Manufacture of Professional and Scientific and Measuring and Controlling Equipment, not elsewhere classified declined by 1.7% to RM535.7 million compared to RM545.0 million in 2001.

*(Source: Monthly Manufacturing Statistics December 2002, Department of Statistics Malaysia).*

**Export Performance of End-user Products**

- Between 1998 and 2002, gross export of Electronics grew at an average annual rate of 7.8%;
- Between 1998 and 2002, gross export value of Electrical Machinery and Appliances increased at an average annual rate of 3.6%;
- Between 1998 and 2002, the gross export of Consumer Electrical Products (mainly audio-visual products) increased at an average annual rate of 0.5% amounting to approximately RM21.1 billion;
- Between 1998 and 2002, the gross export of Household Electrical Appliances (mainly rice cookers, washing machines, refrigerators and others) increased at an average annual rate of 12.4%;

*(Source: Monthly Statistical Bulletins May 2003, Bank Negara Malaysia);*

- Between 1998 and 2002, the export of Telecommunications and Sound Recording and Reproducing Apparatus and Equipment experienced an average annual growth rate of 3.2%;
- In 2002, the export value of Automatic Data Processing Machines increased by 31.0% to reach approximately RM33.0 billion compared with RM25.2 billion in 2001;
- Between 1998 and 2002, the export value of Automatic Data Processing Machines increased at an average annual rate of 12.5%;
- Between 1998 and 2002, the export of road vehicles declined at an average annual rate of 6.3% to reach approximately RM1.6 billion in 2002. However, export of road vehicles increased by 18.4% in 2002 compared to 2001

*(Source: Monthly External Trade Statistics December 1999 and 2002 Department of Statistics).*



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**13. Areas of Growth and Opportunities**

**Exports**

- Many local manufacturers focus their sales on MNC based in Malaysia.
- Opportunities exist for Malaysian manufacturers to service overseas based customers. This will open up a significantly larger market and reduce dependencies on companies who are based in Malaysia.
- With the implementation of AFTA and WTO, competition has become global. As such, manufacturers that are able to address export markets are in a significantly better position to sustain business growth and success.

**Original Equipment Manufacturer**

- Most manufacturers of Plastic Injection Moulding products are involved in providing parts and components to Original Equipment Manufacturers (OEM).
- Opportunities exist for manufacturers to be OEM for MNC. With this additional value adding, it would provide manufacturers with higher profitability as well as increase their customers' dependency on their services.
- In addition, the convenience of dealing with only one manufacturer from mould design to the assembly of finished products would appeal significantly to customers.

**Exotic Materials**

- There are opportunities for manufacturers to undertake research and development to come up with exotic materials.
- One example is the mixing of titanium with plastic to produce a hardy material that is used in PC notebooks to withstand impact and rough handling.
- Such developments would increase the applications of plastic injection moulded products to increase sales and profits.
- More importantly, these new materials will enable the owner a period of monopoly until such time some other manufacturers come up with competing alternatives.

**14. Threats and Risk Analysis**

**Increased Competition from Lower-Cost Producing Countries**

- Lower-cost producing countries such as China present intense competition, domestically and internationally for manufacturers within the Injection Moulding Industry.

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- These lower-cost producing countries, operating on abundant and cheaper labour, are able to manufacture and export their products at relatively lower prices at comparable quality.
- As a result, Malaysia may lose its comparative advantage to the lower-cost producing countries.

**Mitigating Factors**

- In the intensely competitive Injection Moulding Industry, manufacturers are encouraged to move up the value-chain and to deliver innovative products.
- This would require manufacturers to focus on research and development to develop new products or use new materials.
- In addition, local manufacturers are also encouraged by the government to become original brand manufacturers and incorporate brand building and marketing of their own finished products.
- Manufacturers who are ready for such a shift are in a good position to compete against lower cost countries as the focus of their competitive advantage is not cost dependent.

**Implementation of Asean Free Trade Area**

- The reduction of import duties to between 0% and 5% with the implementation of AFTA through Common Effective Preferential Tariff (CEPT) would make imports very competitive against locally manufactured products.
- CEPT is the mechanism by which tariffs on goods traded within the Asean region, which meet a 40% Asean content requirement, will be subjected to a reduction of the above-mentioned range of tariff by 2003 (2006 for Vietnam, 2008 for Laos and Myanmar).

**Mitigating Factors**

- New players resulting from the implementation of AFTA would need to invest significant effort and time to develop and market their products to gain acceptance from local consumers. This would provide some advantages to existing local players at least in the short to medium term. During this period, local players can learn to adapt to the new competitive environment to sustain business growth and success.
- Local players with good track record, established integrated distribution, logistics network and wide range of products would be in a better position to face the increased competitive pressure from the potential new players in the market.
- In addition, AFTA also provides opportunities for local manufacturers to address new export markets within AFTA.

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- Currently some of the plastic resins are subjected to 15% import duty (Source: *Royal Customs and Excise, Malaysia*). The implementation of AFTA and the subsequent reduction or removal of duties would also compel local resin producers to be more cost competitive. From this perspective, the implementation of AFTA would benefit local manufacturers within the Plastic Injection Moulding Industry.

**Global Economic Slowdown**

- Any prolonged slowdown in the global economy will have a negative impact on manufacturers within the Injection Moulding Industry as consumers trim their spending and thus reducing demand for consumer goods.

**Mitigating Factors**

- The Malaysian government has responded to the slowdown in the United States economy by adopting aggressive monetary and fiscal measures to stimulate domestic demand. Malaysia's trading partners have also adopted aggressive measures to stimulate demand. This will help mitigate some of the impact of an economic slowdown.
- Manufacturers that are strong financially, have extensive and established distribution network and a wide and diverse range of products would be better able to survive the impact of a global slowdown.

**Use of Alternative Materials**

- There are substitute products to plastic injection moulded products, for example steel, reinforced fibreglass and other composite materials.
- As an example, the current world's excess capacity for steel production could push the price of steel to the point where it would increase its appeal to replace plastic parts, components and products.
- Steel parts, components and products, through metal stamping, could be mass produced to make it a viable alternative to plastic injection moulded components and products.

**Mitigating Factors**

- The probability of other materials replacing plastic is low due to the low cost of plastic as a raw material as well as the low cost of mass production.
- In reality, plastic injection moulded products have replaced many other types of materials, especially steel-based products.
- Some examples where plastic injection moulded products have replaced steel-based products include automotive bumper bars and casings for many consumer electrical and electronic appliances.

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- Other materials are either too expensive or cannot be easily mass produced, example reinforced fibreglass.
- Use of other polymers like synthetic rubber, polyurethane and silicon is not an issue as the process and machinery used is effectively the same as plastic injection moulding, except the feed-stock is different. From that perspective, there is nothing preventing current plastic injection moulding manufacturers from using these raw materials to meet their customers' requirements and specifications.

**Fluctuations in Prices of Raw Materials**

- As Plastic resins are commodities, the cost of these commodities is subjected to fluctuations in world prices. In some situations, increases in the price of raw materials are not easily passed onto users. This could impact on margins or alternatively, if the increase in cost is passed onto users, the manufacturer may not be price competitive.

**Mitigating Factors**

- Manufacturers with strong financial strengths are able to hold stocks of these raw materials to cushion against fluctuations in prices.
- As these raw materials are commodities and therefore subjected to world prices, all manufacturers that use these materials are equally affected.

**15. Market Size**

- In 2002, the market size for the Manufacture of Plastic Injection Moulded Products in Malaysia was estimated at approximately **RM3.5 billion** based on the turnover of the total Plastics Industry (*Source: Malaysian Plastics Manufacturers Association*).

**16. Market Share**

- Based on Luster Group's revenue of approximately RM130.6 million for the financial year ended 2002, the market share of Luster Group was approximately **4%**. This was based on the total market size of the Manufacture of Plastic Injection Moulded Products in Malaysia.

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Vital Factor Consulting Sdn Bhd has prepared this report in an independent and objective manner and has taken all reasonable consideration and care to ensure the accuracy and completeness of the report. It is our opinion that the report represents a true and fair assessment of the industry within the limitations of, among others, secondary statistics and information, and primary market research. Our assessment is for the overall industry and may not necessarily reflect the individual performance of any company. We do not take any responsibilities for the decisions or actions of the readers of this document. This report should not be taken as a recommendation to buy or not to buy the shares of any company or companies.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Wooi Tan', with a stylized flourish at the end.

Wooi Tan  
Managing Director  
Vital Factor Consulting Sdn Bhd