

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

(iv) Profit and Dividend

The financial record of ELHH based on its audited accounts for the financial period from the date of incorporation to 31 December 1999 and the financial years ended 31 December 2000 to 2001 are as follows:-

	Financial Period From 28 June 1999 to 31 December 1999 (RM'000)	Financial Year Ended 31 December	
		2000 (RM'000)	2001 (RM'000)
Revenue	-	2,177	1,905
EBIDTA	-	89	163
Depreciation	-	-	-
Interest expense	-	-	-
Interest Income	-	-	-
PBT	-	89	163
Tax expense	-	(26)	(49)
PAT	-	63	114
No. of Shares in issue	*	100	100
Weighted average number of Shares in issue ('000)	*	71**	100
Gross EPS (RM)^	-	1.25	1.63
Net EPS (RM)^	-	0.89	1.14

* *The paid up capital comprised 2 Shares issued at par value.*

** *Based on weighted average number of ordinary shares in issue which has been adjusted for the new issue of 99,998 Shares on 18 April 2000.*

^ *Based on weighted average number of ordinary shares.*

Notes:-

- There were no extraordinary or exceptional items during the financial years under review.*
- The company commenced operations in year 2000.*
- The decrease in revenue in 2001 was mainly due to competitive market environment while the higher pre-tax profit was mainly attributed to containment of administration expenses.*

(v) Subsidiary and Associated Companies

ELHH has no subsidiary companies or associated companies as at 31 May 2002.

4 INFORMATION ON THE ENGTEx GROUP (Cont'd)

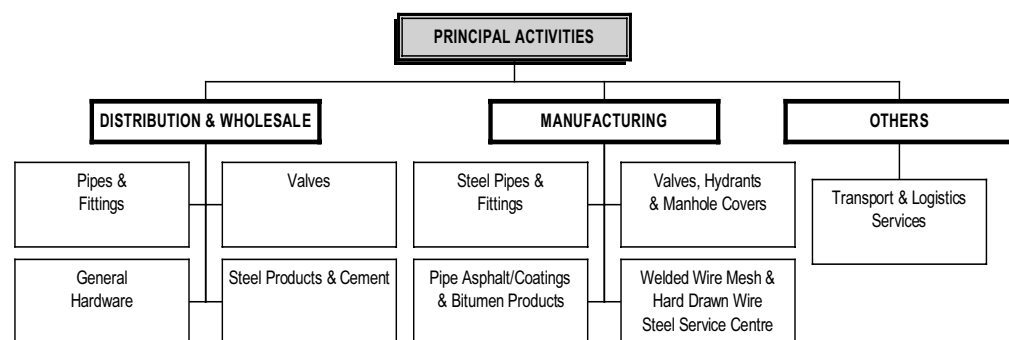
4.5 Business Overview

Engtex is principally an investment holding company with a wholly-owned subsidiary, ESB, which has twelve(12) subsidiaries where, Allpipes, a subsidiary of ESB, in turn has two(2) subsidiaries and ELHT, another subsidiary of ESB has one(1) subsidiary. An overview of the Engtex Group's corporate structure is set out in Section 1.1 of this Prospectus.

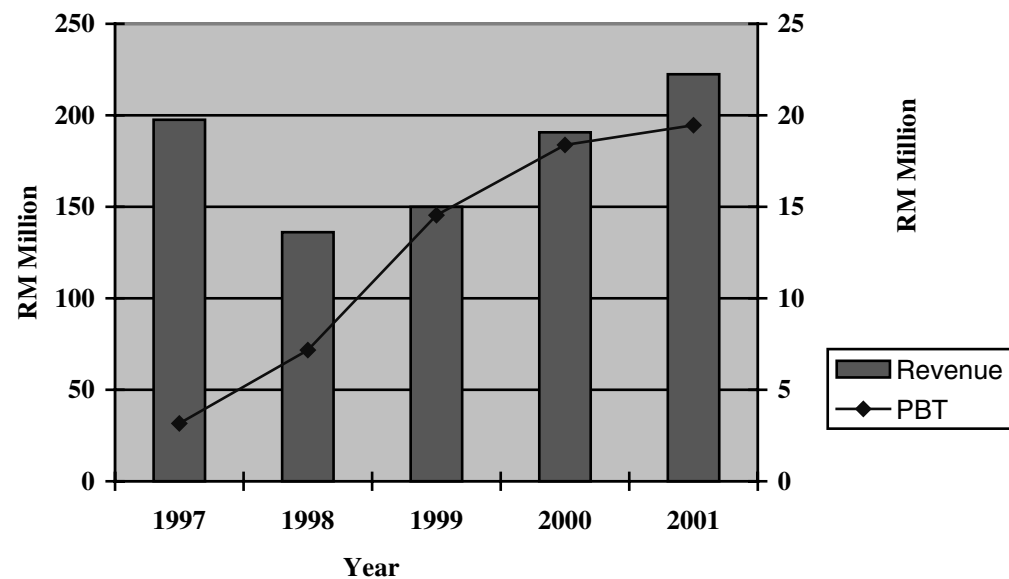
The Group's principal activities can be broadly categorised into two major activities:

- distribution and wholesale of PVF, plumbing materials and general hardware products; and
- manufacturing of steel PVF, pipe asphalt/coatings, bitumen products, hydrants, manhole covers, welded wire mesh and hard drawn wire.

The core business activities of Engtex can be illustrated as follows:

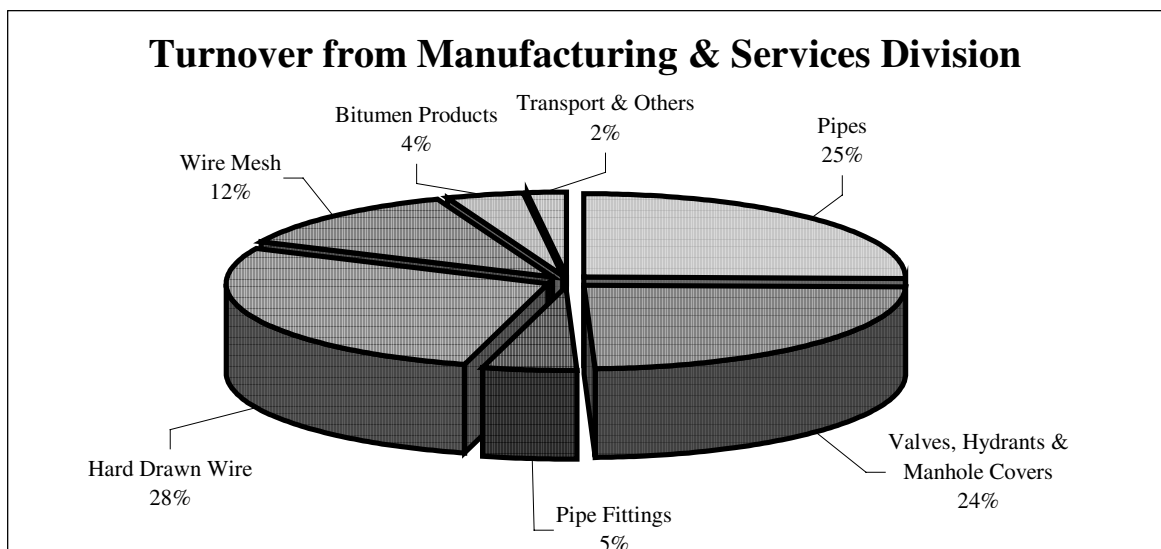
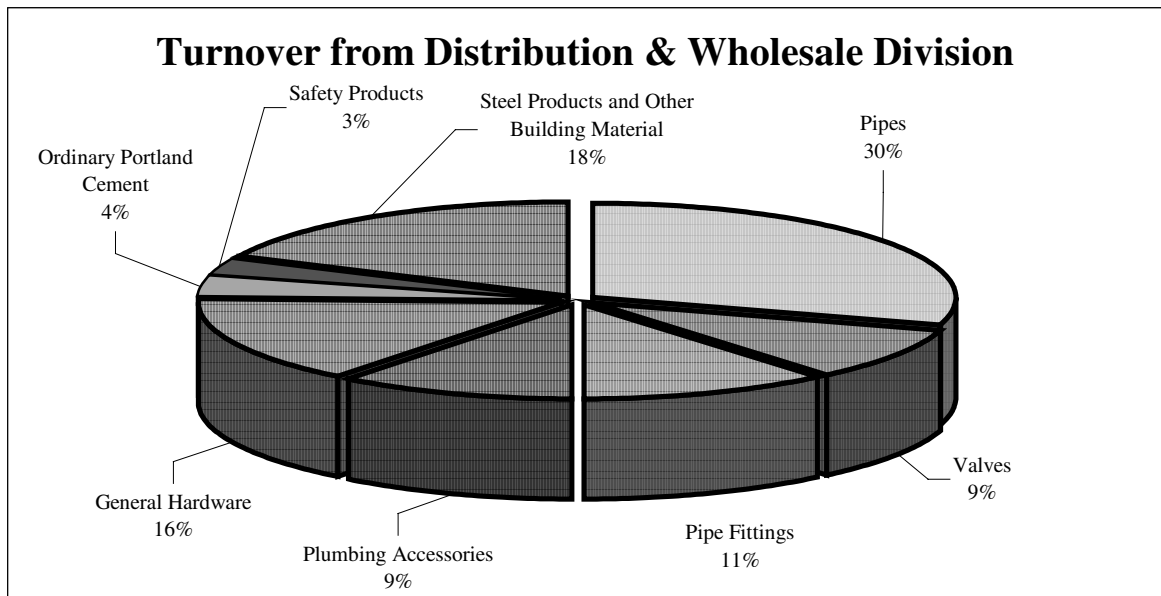
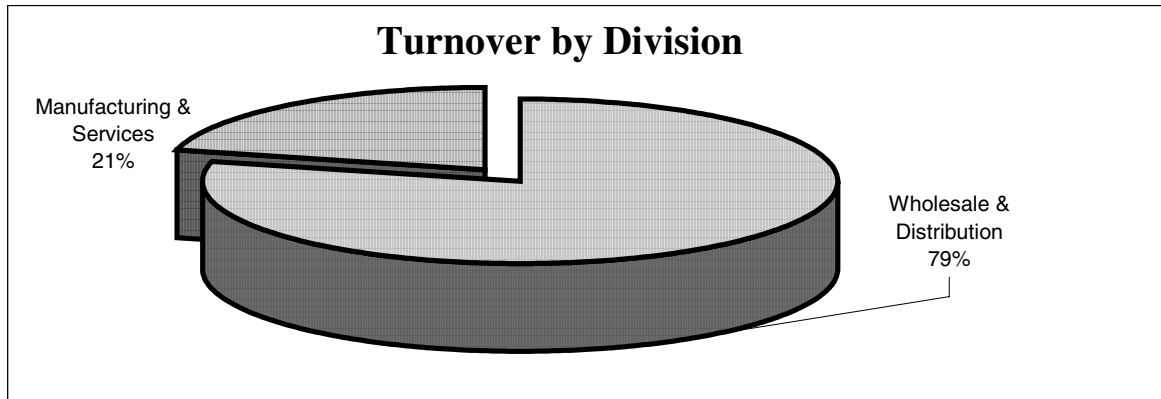


The Group's core activities have been distribution and wholesale of PVF, plumbing materials and general hardware products since ESB was established in 1983. From 1996, in a move to further expand the Group's activities, the Group integrated backwards and started manufacturing steel pipes, bitumen products, welded wire mesh, valves, fittings, hydrants and operating a steel service centre which provides shearing services. However, distribution and wholesale of PVF and plumbing materials still remains the principal income contributor for the Group. For the year ended December 2001, Engtex posted a Group's consolidated revenue of RM222.43 million, an increase of 16.6% from the previous year. The chart below illustrates the revenue and PBT of the Group for the past 5 years.



4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

The distribution and wholesale division contributed approximately 79% of the Group's total revenue for the financial year ended 31 December 2001 out of which approximately 60% is derived from the distribution and wholesale of PVF and plumbing materials. The table below is a summary of the Group's revenue according to the major type of products:

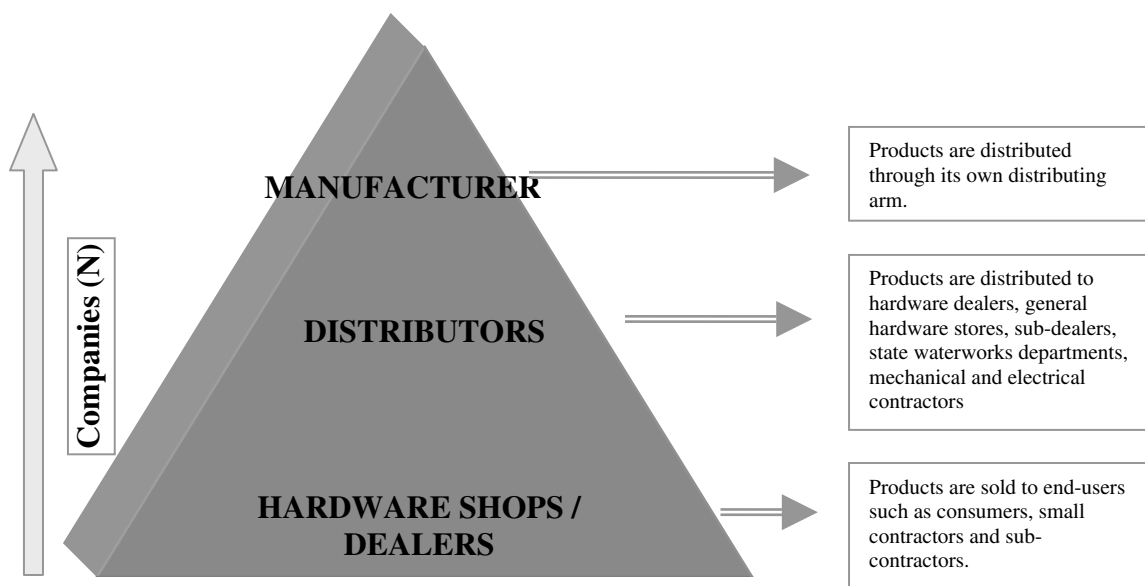


4 INFORMATION ON THE ENGTEx GROUP (Cont'd)

Market Size Estimation and Market Positioning

Based on an independent market research conducted by Researchlink in 2001 on the eleven(11) key players in the distribution and wholesale of PVF, Engtex has the **largest** market share in Malaysia. For this focused sector of distribution and wholesale of PVF, the Group recorded a revenue of approximately RM133.7 million in the year 2000 for the PVF industry, representing approximately 27% of the estimated total revenue of RM498.3 million among the abovementioned 11 key players. The Board is confident that it can sustain and even increase its current market share as the Group is making continuous efforts and plans to expand and enhance its business activities via *inter-alia*, the increased capacity of its one-stop distribution centre in Putra Industrial Park, the implementation of the Enterprise Resource Planning (“ERP”) computer system, emphasis in broadening its customer base by targeting lower levels of the distribution chain and expanding the supply chain of its products carried; eg. expanding its bathroom and plumbing materials.

In addition, Engtex has its own manufacturing arm, which supports the distribution and wholesale activities. Other players of the same capacity, generally follow a general distribution channel where they have to source their products from individual manufacturers and then sell to the re-sellers/end-users. The re-sellers are mainly comprised of general hardware stores, hardware dealers/trading companies, metal dealers/traders and plumbing materials suppliers. Most manufacturers do not sell directly to the end-users mainly due to its mass production and bulk quantity and need to go through the distributor or dealer to reach the end-users. Engtex, has a competitive advantage where **it involves not only in distribution, but also in manufacturing activities**, where the products manufactured are distributed through its own distribution arm, which helps the Group’s overall activities to run more efficiently and effectively. Generally, the distribution and wholesale method is mainly segmented into three major levels, as illustrated below. As such, equipped with its own manufacturing arm, integrated warehouse and being a reputable distributor, Engtex is involved in the top two levels of the distribution segments.

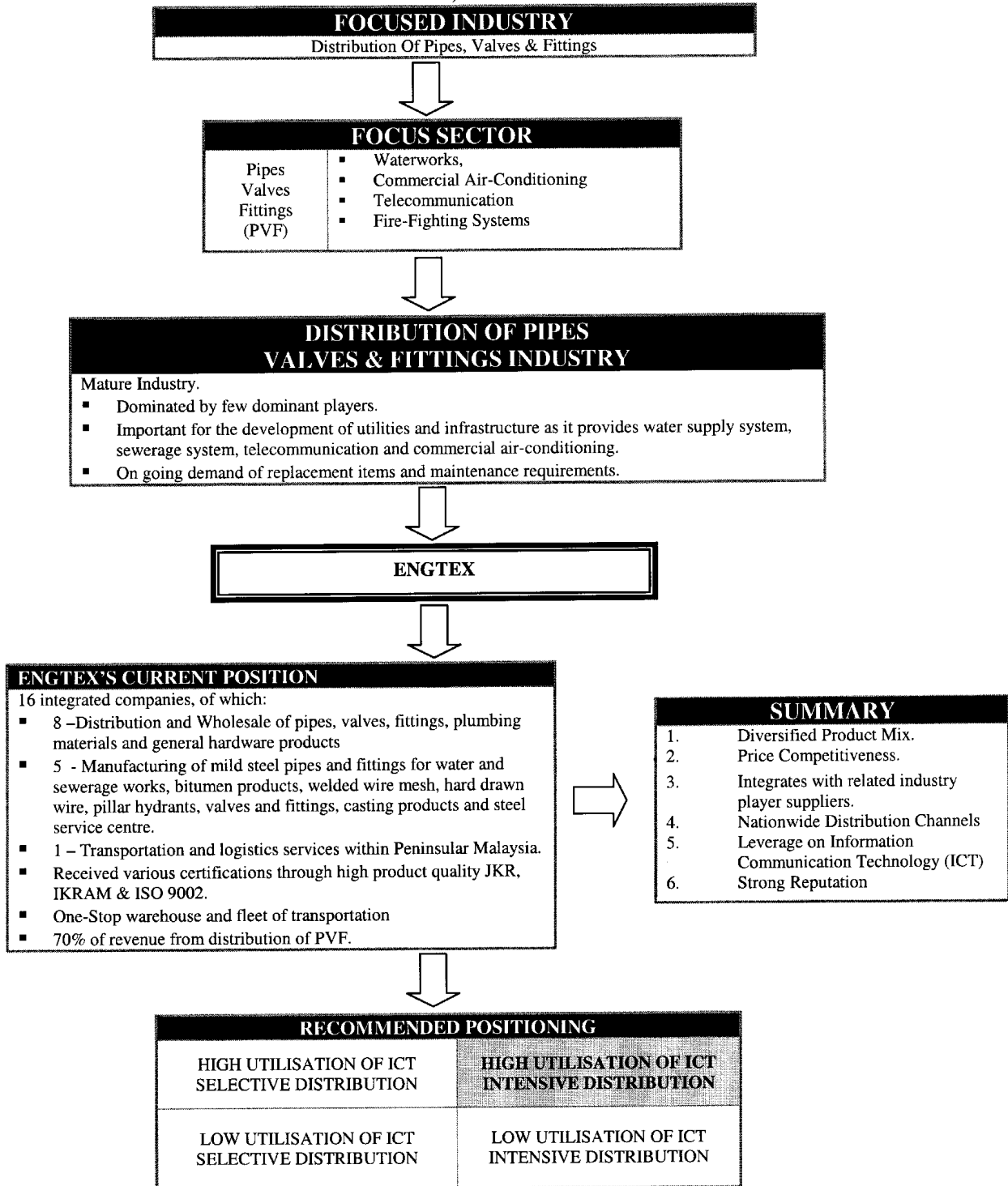


(Source: ResearchLink)

In terms of product range, based on ResearchLink’s findings, Engtex **distributes a wider and more complete range** of PVF and other related materials mainly for the utilities and infrastructure sector compared to other key players. In addition to that, combined with an integrated, large and well-equipped warehouse, the Group derives its strength from its ability to supply to a large clientele base. The Group offers its customers the convenience of sourcing a variety of PVF of various sizes and lengths, to cater to their diverse requirements at one location without having the customers to approach different suppliers. Through its manufacturing and steel service centre, raw materials such as mild steel pipes, are sourced from manufacturers in bulk form and in various sizes, Engtex has the facility and capability to break the bulk and customise the order in terms of quantity and sizes according to the customers’ needs and demands. Engtex also provides the service as a dealer or a sourcing agent for customers who require products, which are not listed under the range of Engtex’s products.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

OVERVIEW OF ENGTEX'S MARKET POSITIONING IN THE DISTRIBUTION & WHOLESALE OF PIPES, VALVES & FITTINGS



(Source: ResearchLink)

4 INFORMATION ON THE ENGTEx GROUP (Cont'd)**a) Distribution and Wholesale**

Out of sixteen(16) companies in the Engtex Group, nine(9) of them are involved in distribution and wholesale businesses. The table below is a summary of the specific regions covered by each company under the distribution and wholesale division.

LIST OF DISTRIBUTION AND WHOLESALE COMPANIES	
Distribution and Wholesale Companies	Operational Area / Market
Benton	Mainly Sabah & Sarawak
ELHT	Northern Region of Peninsular Malaysia
ELHH	Northern Region of Peninsular Malaysia
EMarketing	Construction / Projects supplies (nationwide)
ESB	Head office, main distribution and procurement centre.
ESelatan	Southern Region of Peninsular Malaysia
Hachita	Hardware Dealers and Retailers (nationwide)
LYEM	Hardware stockists/dealers (nationwide)
Mega	Mechanical & Electrical Engineering companies (nationwide)

i) Large Integrated and Well-Equipped Warehouses

The Group's present head office and integrated warehouses are situated in Lot 36 Jln BRP 9/2B, Putra Industrial Park, Bukit Rahman Putra, 47000 Sungai Buloh, Selangor. The Group runs its own salesforce, warehouses and transportation, which are supported by a high utilisation of ICT. The integrated warehouses have a total built-up area of 143,115 square feet.

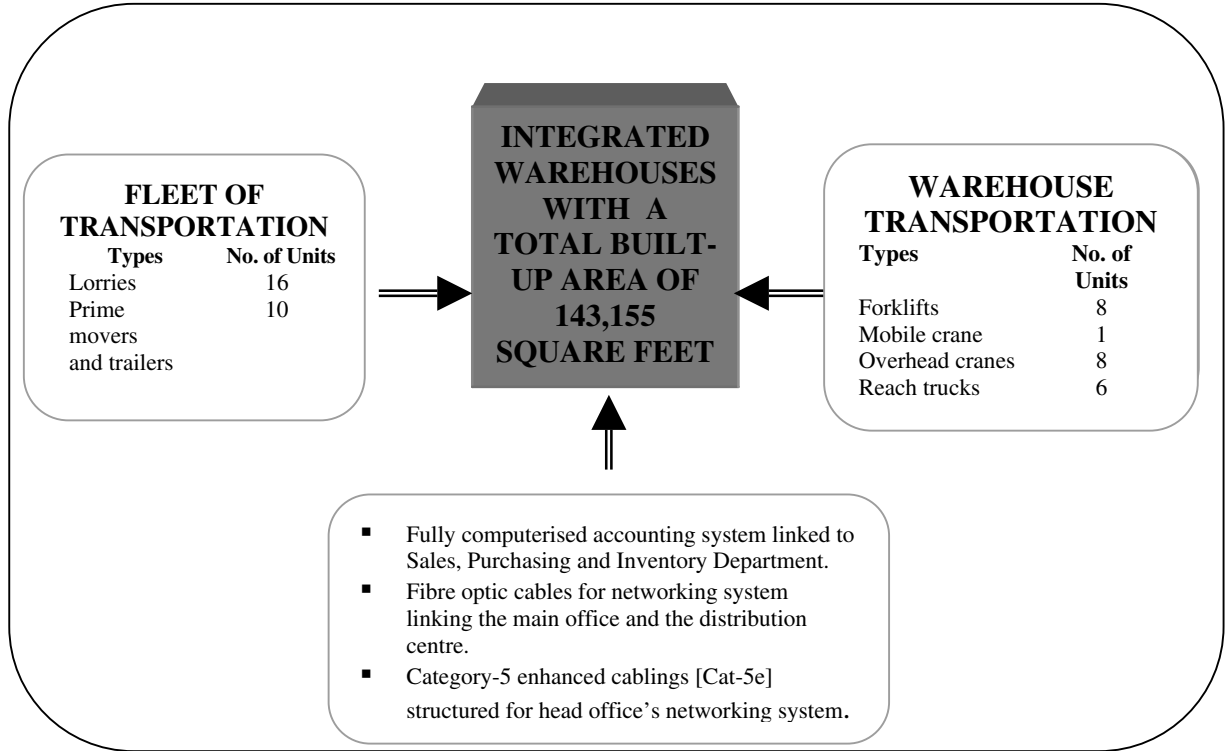
The warehouse is equipped with selective pallet racking system, which facilitates maximum utilisation of warehousing space and forklifts and overhead crane for speedy and efficient loading and unloading of goods. The Group has a fleet of transportation with 8 forklifts, 8 overhead cranes, 6 reach trucks, 1 mobile crane, 10 prime movers and trailers and 16 lorries that are used to deliver goods and provide customer service to its customers.

Its comprehensive and wide range of products, ranging from different sizes and lengths, and its ability to cater customers' diverse requirements has enabled Engtex to be referred to as an integrated one-stop distribution centre. Further to that, the Group has also been appointed by a number of foreign companies to act as their distributor, stockist, dealer, agent or principal, which enables Engtex to distribute the products nationwide. Engtex is also an exclusive agent for, inter alia, Kitz Corporation of Japan for KITZ Commercial Valves and Stonetown Corporation of South Korea for ST Stainless Steel Valves. At times, due to the inherent peculiarities of the products, the specialised nature of demand from its customers, the requirement of these products has to be sourced from Engtex, being the exclusive distributor in Malaysia.

The subsidiary companies of Engtex were incorporated and located in various regions of Peninsular Malaysia. As such, Engtex's distribution activities basically cover the whole geographical area in Malaysia, including Sabah and Sarawak. These subsidiaries are accountable for regional sales as well as for specific products aimed for a targeted market such as hardware retailers and the M&E sectors all over Malaysia. Further to that, Engtex also owns a warehouse in the northern region of Peninsular Malaysia.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

The diagram below illustrates the key components supporting the Group.



ii) *Extensive Distribution Network*

The Group has developed an extensive distribution network in Malaysia as summarized in the following table:

Business Division	Number of customers as at 31 May 2002
Distribution and Wholesale Division*	2,371
Manufacturing Division	152
	2,523

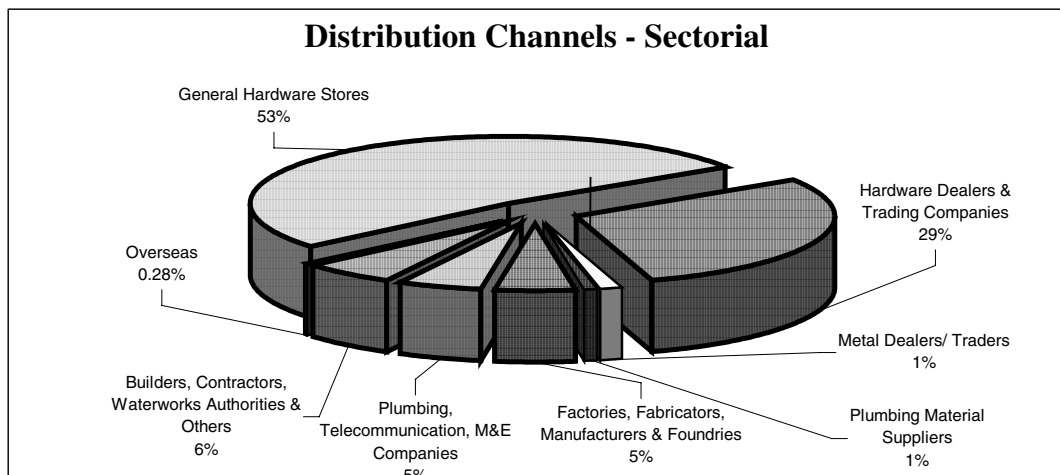
* *Approximately 84% of the Group's customers comprise of general hardware stores, hardware dealers/trading companies, metals dealers/ traders, plumbing materials suppliers who are also re-sellers for Engtex Group.*

The rapid infrastructure development in Malaysia over the past decade has provided the Group with the opportunity to capitalize on the public infrastructure, information, communication and technology (ICT) systems. This has enabled the Group to operate from its integrated one-stop distribution centre located in the central region and a warehouse in the northern region of Peninsular Malaysia, providing an efficient distribution of goods to its customers without having to set up warehousing and logistics facilities in every state of Malaysia.

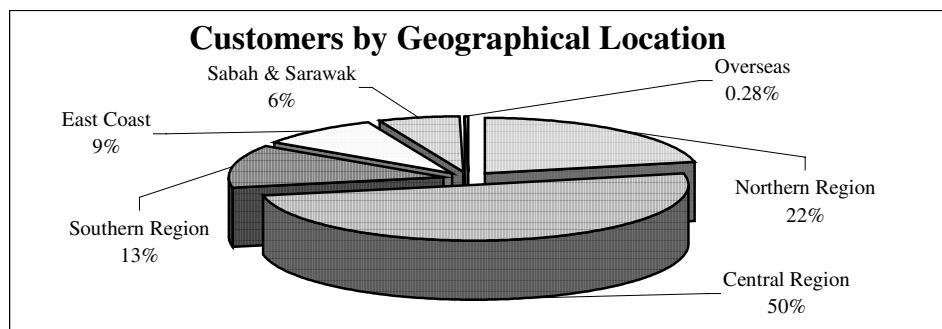
4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

The Group derives its strength from being able to distribute to an extensive network of customers as it is able to achieve economies of scale, higher efficiency and higher profit margins due to lower operation costs i.e. lower warehousing and storage costs, manpower and overhead costs as compared to operating from several warehouses in dispersed locations. As a one-stop distribution centre, the Group offers value-added services to its customers in all regions, in serving their procurement requirements and providing a more effective transport and handling costs as customers' orders are packaged into a single economy order quantity (EOQ) delivery to them, thus minimizing logistics cost. This, in turn translates into a lower cost per unit to the customer and to the Group. Such economies of scale in operations would not be enjoyed by smaller scaled distribution companies unless these companies have the ability to achieve similar economic order quantity and are able to integrate and package their customers' total procurement requirement all-in-one.

The Group's distribution channels by sectors are illustrated in the following table. As shown in the table below, approximately 84% of the Engtex Group's customers are resellers i.e. general hardware stores, hardware dealers/trading companies, metals dealers/traders and plumbing materials suppliers. They, in turn, distribute to the end-users and are more exposed to credit risks for sales transacted by way of credit.



The Group's nationwide customers by geographical locations are illustrated in the table below. The Group's customers are from all states in the Peninsular Malaysia with majority of them located in the central region of Malaysia, the hub of the country's economic activities and development.



4 INFORMATION ON THE ENGTEX GROUP (Cont'd)*iii) Extensive Product Range*

The Group carries an extensive product range, ranging from numerous different types, quality, sizes, lengths of PVF to related hardware products, such as joints and saddles, manhole covers, sanitary wares, water tanks, decorative paints, bolts and nuts, to name a few.

The Group's extensive product range, consists of approximately 150 products categories with more than 5,000 product items in total (includes various types, quality, sizes, lengths etc). This enables the Group to have access to a wider customer base, which includes the small and medium-sized retailers and hardware stores. This also makes the Group unique as it is able to meet most, if not all, of its customers' requirements.

The table below summarizes some of Engtex's distribution products.

LIST OF DISTRIBUTION PRODUCTS	
CATEGORIES	TYPES
Pipes and Fittings	<ul style="list-style-type: none"> ▪ Galvanised Iron Pipes to BS 1387 and related fittings ▪ Galvanised Iron Conduits to BS 31 and related fittings ▪ Carbon Steel Pipes to BS1387 and JIS G3452 and related fittings ▪ Seamless Carbon Steel Pipes to API 5L Gr B and related fittings ▪ Mild Steel Cement Lined Pipes to BS534 and related fittings ▪ PVC Pipes to BS3505/BS3506 and related fittings ▪ uPVC Pipes to BS5255/BS4514/BS4660 and related fittings ▪ Copper Tubes to BS2871/EN 1057 and related fittings ▪ Cast Iron Pipes to BS416 and related fittings ▪ Ductile Iron Pipes to BS EN545/ BS EN598/ BS4772 and related fittings ▪ HDPE Pipes to MS1058 and related fittings ▪ Vitrified Clay Pipes to BS EN295-1 and related fittings
Valves	<ul style="list-style-type: none"> ▪ Bronze/Brass/Cast Iron Gate Valves ▪ Bronze/Cast Iron/Ductile Iron SluiceValves ▪ Bronze/Cast Iron Check Valves ▪ Bronze/Cast Iron Y-Pattern Strainers ▪ Bronze/Cast Iron/ Stainless Steel Ball Valves ▪ Cast Iron Wafer Type Check Valves ▪ Cast Iron/ Stainless Steel Butterfly Valves ▪ Air Valves ▪ Globe Valves ▪ Ball Float Valves
Others	<ul style="list-style-type: none"> ▪ Joints and Saddles ▪ Manhole Covers ▪ Sanitarywares ▪ Seal Tapes ▪ Water tanks ▪ Bathroom Fittings ▪ Aluminium Foils and Sheets ▪ Galvanised Iron Sheets and Wire ▪ Bolts and Nuts ▪ Decorative Paints ▪ Fibre Wool ▪ Safety apparels

These products are supplied to a large clientele base ranging from general hardware stores, mechanical and engineering sectors to government agencies. Further details on the major customers and principals/suppliers of Engtex can be found in Section 4.9 and 4.10 of this Prospectus.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)*iv) Sources and Availability of Products*

Engtex currently sources from more than 400 different suppliers for its PVF, plumbing materials, hardware and other related materials. The products are mainly sourced locally. Since 1997, Engtex has maintained its local and imported goods to a 70:30 proportion. Therefore, Engtex's dependency on one supplier is minimised. The manufacturing subsidiaries are also its source for the distribution and wholesale business activity.

The top ten(10) local suppliers of products for the distribution and wholesale division of Engtex are listed below:

Supplier	
1	Maruichi Malaysia Steel Tube Bhd
2	Simen Utama Sdn Bhd
3	Jotun (Malaysia) Sdn Bhd
4	Bina Plastic Industries Sdn Bhd
5	Malaysia Steel Works (KL) Berhad
6	Amalgamated Industrial Steel Bhd
7	Ban Lian Hardware Sdn Bhd
8	Chin Well Fasteners Co Sdn Bhd
9	Kingshoe Manufacturing Sdn Bhd
10	Arensi Plastics Sdn Bhd

Engtex has been appointed by a number of foreign companies to act as their distributor, stockist, dealer, agent or principal. Below is a list of some of the foreign distributors/ stockists/ dealers/ agents/ principals of the Group:

Supplier's name		Country
1	Chengde Malleable Iron General Factory	China
2	Horobin Limited	United Kingdom
3	Hubei Provincial Minemetals International Trading Corp Ltd	China
4	I.V.R. Valvole a Sfera S.P.A.	Italy
5	Kitz Corporation	Japan
6	Stonetown Corporation	South Korea

Further details on the suppliers are found in Section 4.10 of this Prospectus.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)v) *Trademarks, Patents and Licenses*

The Group distributes sanitarywares, washbasins, sinks, taps and mixers, biptaps and stop cocks products under its own trademark "ESB". It also distributes and manufactures manhole covers, cast iron and ductile iron valves, ductile ferrous saddles, pillar hydrants and sluice valves under the "LYE" trademark. The "LYE" branded sluice valves and pillar hydrants are the leading product brand in Malaysia in its product categories being one of the pioneers of locally produced products with a history of more than 25 years.

Other than its own ESB and LYE brands, the Group also distributes a number of items under the following brandnames as follows:

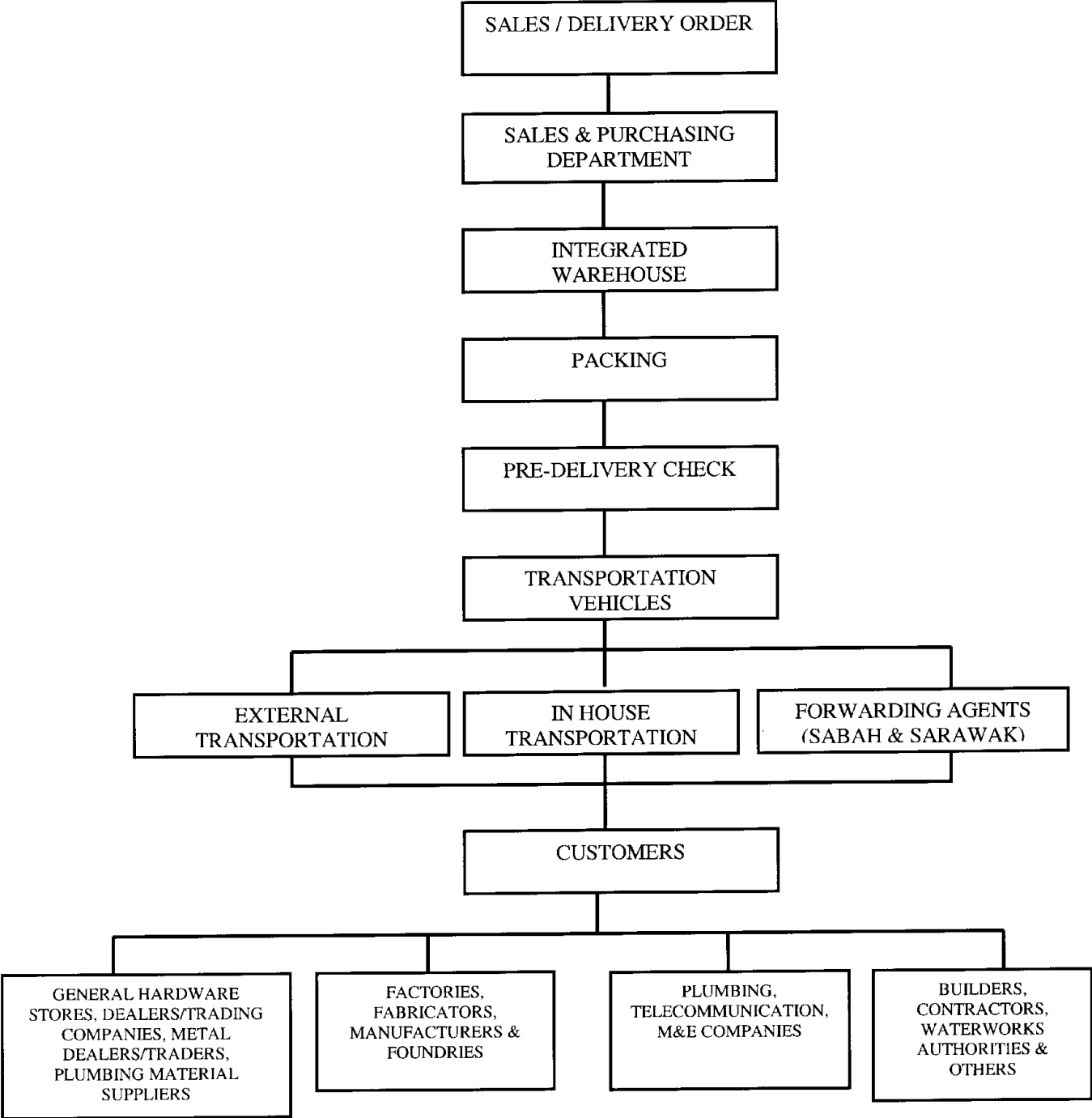
LIST OF BRAND NAMES	
NAME OF BRAND	PRODUCT RANGE
MARUICHI, AISB, CHOO BEE	Galvanised Iron (G.I) and Black Steel Pipes and other related products
BINA, RESINTECH, RNC	Un-Plasticised Poly Vinyl Chloride and Poly Ethelene pipes and fittings
CITY	Bathroom and plumbing accessories
"E" Brand	Pipe fittings and bathroom accessories
KEMBLA	Copper tubes and fittings
KITZ, ST	Valves
MEGA	Stainless Steel Sinks
SAFELOCK	Locksets, padlocks, door closers and hinges
THREE ONE	Cast iron malleable iron pipes fittings
WAGO	Seal tapes and joint sealant
YG (Yuan Gang)	Ductile iron pipes
Chin Well	Bolts and nuts
Kings,K2	Safety shoes
Jotun	Decorative paints

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

vi) *Methods of Distribution and Wholesale*

The flow of Engtex's sales order process can be summarised as below:

Sales Order Flowchart



4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

(b) Manufacturing

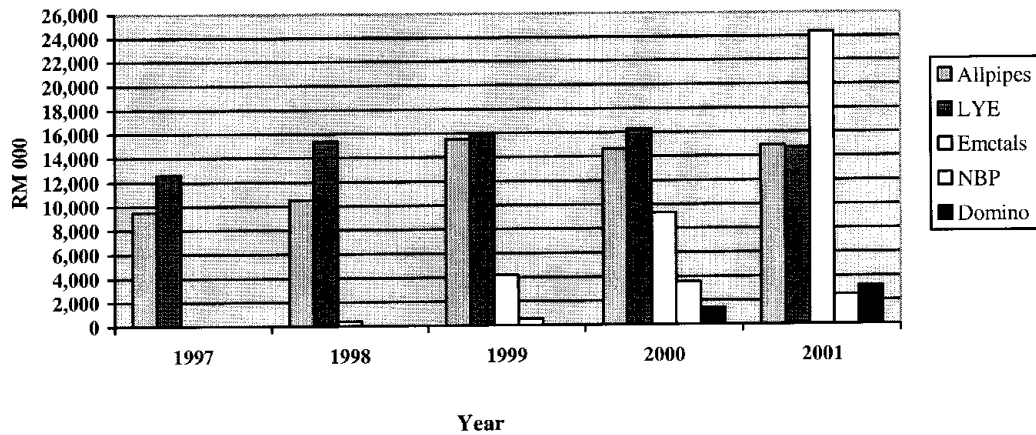
The Group's manufacturing activities, which are also related to the PVF industry, are carried out by Allpipes, Domino, EMetals, LYE and NBP. It's manufacturing division supports the distribution and wholesale activities. The manufacturing division leverages on the extensive distribution network of the distribution and wholesale division and therefore, increases efficiency and reduces distribution and marketing costs of the manufacturing division.

Engtex is aware that capital equipment i.e. industrial machinery plant and equipment are essential to sustain its growth and as such, Engtex has been investing in the expansion of its manufacturing plants and equipment. The Group has made continuous efforts and plans to improve the Group's competency by acquiring additional machineries and equipment. The machineries are mainly sourced from Taiwan, Japan and European Union countries. The following is a list of machineries used by Engtex.

LIST OF MANUFACTURING COMPANIES AND THEIR MACHINERIES		
COMPANY	MANUFACTURING PRODUCTS	TYPE OF MACHINERY
Allpipes	Cement lined mild steel pipes and other steel related products and fittings	<ul style="list-style-type: none"> ▪ Bitumen Kettle ▪ Cement Mixer / Lining Machine ▪ High Pressure Hydrotesting Machine ▪ Hydraulic Sleeve Forming Machine ▪ Auto Welding Machine ▪ Pre Bender/Roll Bender ▪ Shearing Machine ▪ Blasting Machine
Domino	Cement lined mild steel pipe fittings	<ul style="list-style-type: none"> ▪ Bitumen Kettle ▪ Cement Mixer/Lining Machine ▪ Auto Welding Machine ▪ Hydrotesting Machine ▪ Blasting Machine
EMetals	Welded wire mesh, hard drawn wire and operates a steel centre providing shearing services	<ul style="list-style-type: none"> ▪ Automatic Straightening & Cutting Machine ▪ Mesh & Drawing Machines ▪ Multi Purpose Wire Mesh Welding Machine ▪ Overhead Cranes ▪ Numerical Controlled (NC) Shearing Line – Integrated Pant & Machinery ▪ Wire Straightening and Cutting Machine
LYE	Sluice valves, air valves and pillar fire hydrants and other ferrous and non-ferrous cast industrial products	<ul style="list-style-type: none"> ▪ Hardblown Moulding Machine ▪ High Frequency Induction Melting Furnace & Accessories ▪ Jolt Squeeze Stripper Moulding Machine/Shakeout Machine/Shot Blasting ▪ Moulding Machine ▪ CNC Lathe Machine ▪ Metallurgical Microscope
NBP	Pipe Asphalt/Coatings and Bitumen Products	<ul style="list-style-type: none"> ▪ Bitumen Mixers ▪ Bitumen Storage Tanks ▪ Reactor / Thermal Oil Heating Furnace ▪ Termal Oil Storage Tanks ▪ Kaolin Intake / Storage Silo ▪ Kaolin Powder Recycle Silo

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

The chart below illustrates the revenue trend of the manufacturing arms of Engtex:-



Notes:

1. Emetals commenced operations only in the year 1998.
2. NBP commenced operations only in the year 1999.
3. Domino commenced operations only in the year 2000.

1) Product Range from the Manufacturing Division

The following are the list of brands manufactured by Engtex:

LIST OF PRODUCTS MANUFACTURED	
BRAND NAME	PRODUCTS
Allpipes	Mild Steel Cement Lined Pipes and Fittings of various sizes
LYE	Pillar Hydrants
LYE	Manhole covers
LYE	Valves
LYE	Pipes Joints, Castings Accessories
Generic Brand	Pipe Asphalt
Generic Brand	Bitumen Products
Generic Brand	Welded Wire Mesh
Generic Brand	Hard Drawn Wire

2) Source and Availability of Raw Materials

With respect to the Group's manufacturing activities, it is not dependent on any single supplier as it obtains its raw materials locally from various suppliers. Approximately 90% of the raw materials used are sourced locally from various suppliers. Raw materials are sourced overseas when the related products are unable to be sourced locally. The main raw materials used in production are as follows:

LIST OF RAW MATERIALS		
COMPANIES	END PRODUCTS	RAW MATERIALS
Allpipes / Domino	Cement Lined Pipes and Fittings	<ul style="list-style-type: none"> ▪ Steel Plates ▪ Bituminous Coating ▪ Fibre Glass Tissue ▪ Cement ▪ Sand
NBP	Pipe Asphalt/Coatings and Bitumen products	<ul style="list-style-type: none"> ▪ Bitumen-Grade 80/100 ▪ Refined Kaolin ▪ Ferric Chloride

4 INFORMATION ON THE ENGTEx GROUP (Cont'd)

LIST OF RAW MATERIALS		
COMPANIES	END PRODUCTS	RAW MATERIALS
EMetals	Welded Wire Mesh and Hard Drawn Wire	<ul style="list-style-type: none"> ▪ Wire Rod
LYE	Valves, Fire Hydrants, Manhole Cover, Valve Chambers, Pipe Joints	<ul style="list-style-type: none"> ▪ Mild Steel Scrap, Brass Scrap ▪ Bronze ▪ Japan Pig Iron ▪ Ferrous Silicon ▪ Rubber gasket ▪ O-ring ▪ Silicon and Resin coated sand

The top ten(10) suppliers for the manufacturing division of Engtex are listed below:

Supplier	
1	Amsteel Mills Marketing Sdn Bhd
2	Megasteel Sdn Bhd
3	Shell Malaysia Trading Sdn Bhd
4	Wonderful Metal Sdn Bhd
5	Caltex Oil Malaysia Limited
6	Kesavan Metal Trading
7	Joo Peng Enterprise
8	BNF Engineering & Supplies (M) Sdn Bhd
9	Advanced Equipment (M) Sdn Bhd
10	LSPCM (M) Sdn Bhd

3) *Details of Engtex's Manufacturing Subsidiary Companies*

(i) **Allpipes**

Allpipes operates from its factory located at Lot 3757, Batu 29 Jalan Ipoh-Kuala Lumpur, 48200 Serendah, Hulu Selangor, with a land area of approximately 165,528 square feet. This premise houses its production facilities, whereas, the sales and marketing office is located at Lot 36 Jalan BRP 9/2B, Putra Industrial Park, Bukit Rahman Putra, Bukit Rahman Putra, 47000 Sungai Buloh. Its principal products are mild cement lined pipes and fittings of various sizes and lengths.

The factory has two(2) production lines. Its total production capacity of 8,000 MT per annum amounts to RM16 million per annum based on 1-shift operation and on two production lines per day. Allpipes is currently operating at approximately 95% of its capacity on average. It is capable of increasing its capacity to 12,000 MT per annum by operating on two-shifts with additional manpower when market demand increases.

Allpipes' products are marketed under the ALLPIPES brand name with a 'Swan' symbol and are in compliance with the British Standards BS 534:1981, BS3600:1976 and BS 3601:1987 for pipes ranging from 60.3mm to 2200mm. These pipes are certified by Ikram Quality & Certification Institute (IQCI). Allpipes is also an ISO 9002 company, having awarded the certification by SIRIM QAS Sdn Bhd in December 2000.

Allpipes' customers consist mainly of State Waterworks authorities and corporations, waterworks contractors, hardware and plumbing dealers. Allpipes' products are also distributed through Engtex Group.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

The products manufactured by Allpipes and their applications are as follows.

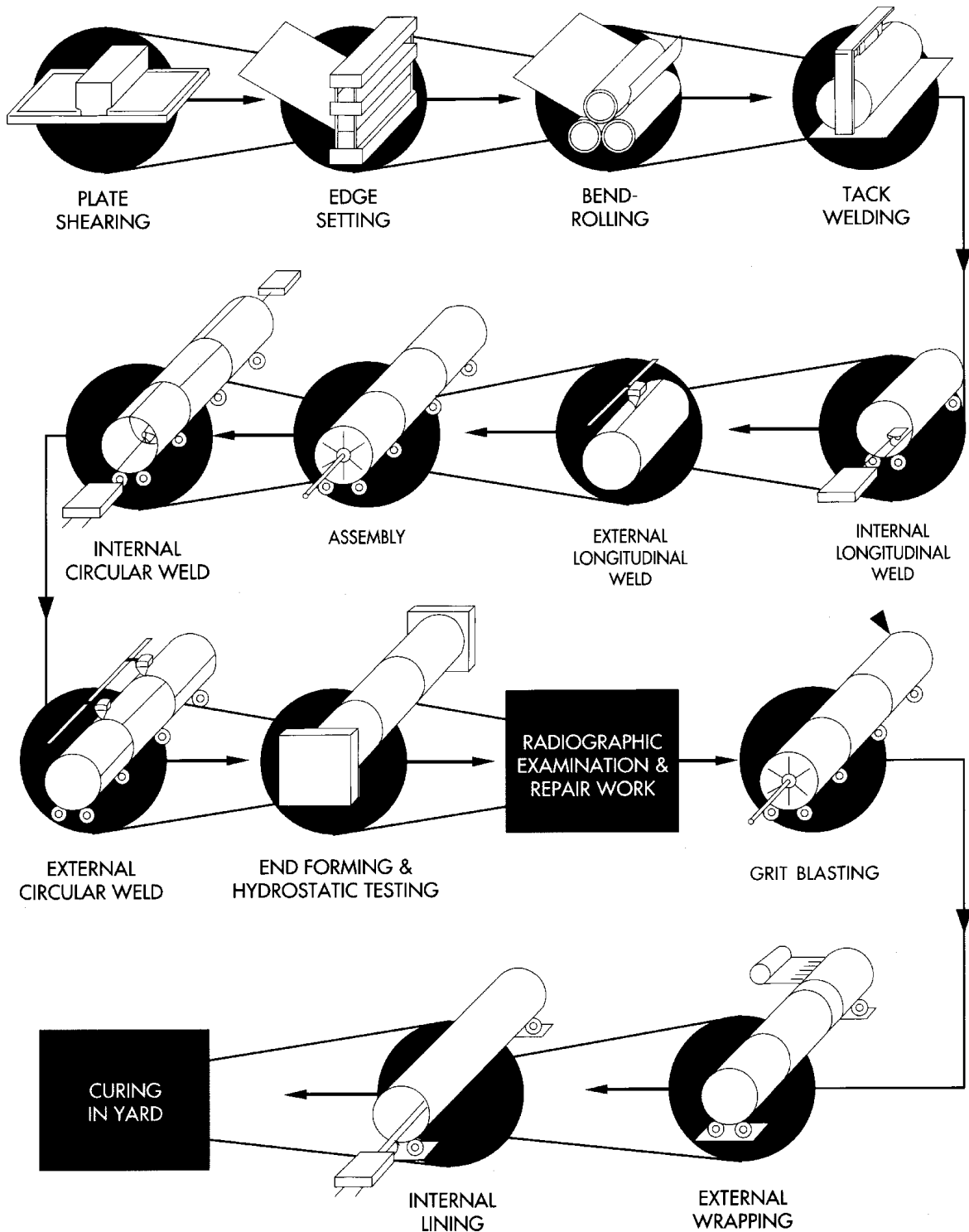
Product	Application(s)
Cement lined mild steel pipes & fittings	For government and private water supply projects.
High alumina cement lined mild steel pipes & fittings	For sewerage piping system.

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4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

ALLPIPES

PIPE MANUFACTURING FLOW CHART



4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

Allpipes' Mild Steel Cement Lines Pipes Manufacturing Process

1. **Plate Shearing**
Coil plate or standard 20 feet length plates are sheared to the correct length meeting the required circumference length of the pipe.
2. **Edge Setting**
Sheared plates are sent to edge setting machine at which both ends of sheared plate are bent into required radius.
3. **Bend Rolling**
Plates are rolled into required circular sections.
4. **Tack Welding**
The cylinders are tack-welded at the joining edges.
5. **Internal Longitudinal Weld**
Internal longitudinal welding process is carried out by using automatic submerged arc welding machine for pipes larger than 24" diameter.
6. **External Longitudinal Weld**
External longitudinal welding process is conducted by using automatic submerged arc welding machine.
7. **Assembly**
Section cans are sent to assembly platform for assembling. The numbers of section cans used for assembling are determined by required length of pipes being produced.
8. **Internal Circular Weld**
Internal circular welding process is applied by using automatic submerged arc welding machine.
9. **External Circular Weld**
External circular welding process is applied by using automatic submerged arc welding machine.
10. **Spigot & Socket Ends Forming and Hydrostatic Testing**
Each pipe is subjected to hydrostatic testing according to British Standard (BS) 534 requirement. Both ends of the pipe are formed into socket and spigot ends during hydrostatic pressure testing.
11. **Radiographic Examination & Repair Work**
Radiographic examination is to ensure that welding quality meets specified requirement. Repair work will be carried out if defective welding is found.
12. **Grit Blasting**
The pipes are then grit-blasted to remove rust from the surface of the pipes.
13. **External Coating and Wrapping**
External surface of pipes are coated with bitumen and wrapped with inner and outer wrap fibreglass.
14. **Internal Lining**
Pipe's internal surface is lined with mortar cement.
15. **Curing in Yard**
Finished pipes are sent to yard curing. Emulsion paint is applied on pipes external surface. Pipe's dimension and specifications are marked before they are delivered to customer.

4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

(ii) NBP

The company's principal activity is manufacturing bitumen products such as pipe asphalt/coatings and bitumen 115/15. Other products include cold applied bitumen solution under BS3416 and BS4147, which are used mainly for the coating of mild steel, ductile iron, cast iron pipes and fittings.

The company has a bitumen oxidation plant originated from Italy to produce high quality asphalt/bitumen oxidised grade. The bitumen is then compounded to produce bitumen compound suitable for pipe coating requirements.

NBP is one of the three major blown bitumen manufacturers in the country. Its products are sold to established cement-lined mild steel pipes manufacturers such as Petro Pipes Industries (M) Sdn Bhd., Utama Steel Works Sdn Bhd, Pipeway Industry Sdn Bhd and also to its sister companies, Allpipes and Domino.

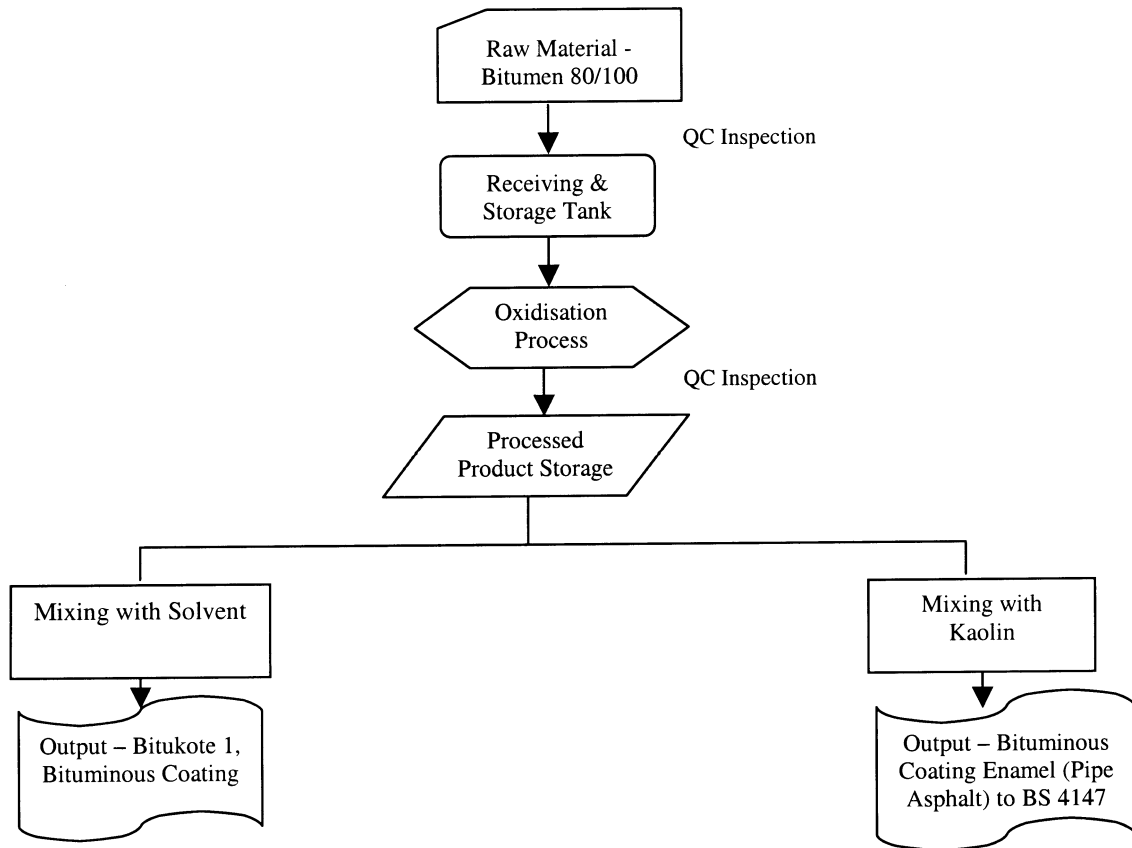
The factory has one(1) production line with a production capacity of 4,800 MT per annum operating on one(1)-shift per day. NBP is currently operating at 76% of its capacity. NBP is capable of increasing its capacity to 9,000 MT per annum by operating additional shift with additional manpower when there is a further market demand.

Product	Application(s)
R115/15 Oxidized Bitumen	Base material for the production of other bitumen products such as BS 4147 and BS 3416 bitumen solution
Hot applied bitumen cake to BS 4147	For cement-lined water pipes coating and other similar rust protection heavy coatings
Cold applied bitumen solution to BS 4147	For water pipes and fittings coating before applying hot bitumen
Cold applied solution to BS 3416	For coating cast iron and ductile iron pipes fittings to prevent from rusting

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4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

NBP'S MANUFACTURING FLOWCHART



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4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

(iii) LYE

The company's market and principal customers are mainly hardware distributors, dealers, State Waterworks authorities and corporations all over Malaysia, waterworks contractors and M&E contractors. More than 90% of its products are consumed locally. Some of its products are exported to United Arab Emirates, Singapore, Brunei and Mauritius.

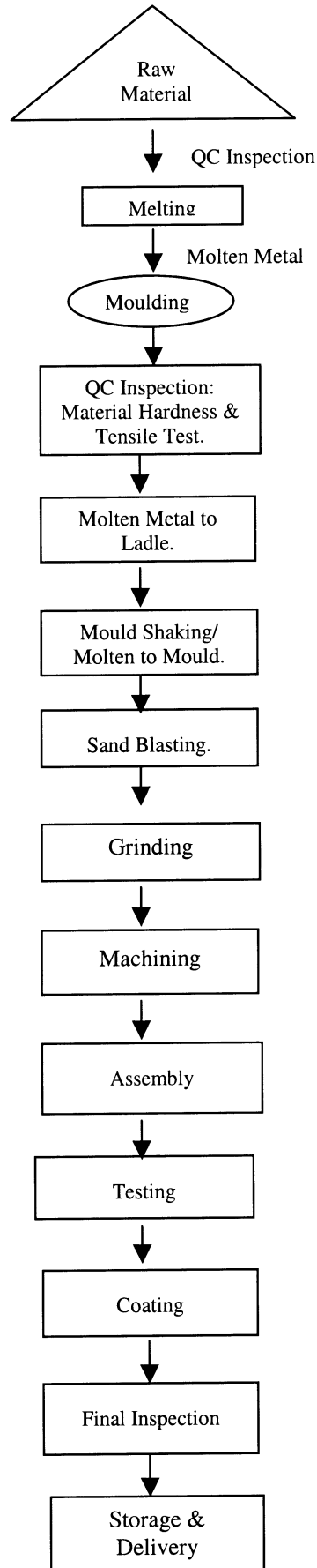
Its manufacturing facilities currently manufactures ferrous and non-ferrous metal castings at 80% production capacity with two(2)-shifts per day which totals to approximately 4,800 MT per annum. LYE plans to operate on three-shift operations and invest in additional induction furnace and related machinery to increase its production capacity to 7,200 MT per annum with additional manpower when there is an increase in market demand. LYE invests in research and development in order to improve production efficiency and capacity.

Product	Application(s)
Cast Iron & Ductile Iron Sluice Valves	Water and sewerage control system
Cast Iron & Ductile Iron Air Valves	Water control systems
Ductile Iron Detachable Joint (DJ), Variable Adaptor (VA) & Ferrous Saddles	Jointing of PVC and uPVC pipes
Cast Iron Hydrants	Pillar Hydrant and Underground Hydrant for fire fighting system
Manhole covers, Frames & Extension Ring	Infrastructure and utilities applications
Ferrous and Non-ferrous Metal Castings	Automotive and agriculture machinery parts, M & E and utilities parts

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4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

LYE'S MANUFACTURING FLOWCHART



4 INFORMATION ON THE ENGTEX GROUP (Cont'd)

(iv) Domino

Domino was incorporated mainly to complement the manufacturing of steel pipe fittings to its holding company, Allpipes.

As such, Domino’s principal activity involves the manufacturing of steel pipe fittings. The company’s factory is located on Lot 3757, Batu 29 Jalan Ipoh-Kuala Lumpur, 48200 Serendah, Hulu Selangor, whereas its business and sales office address is situated at Lot 36, Jalan BRP 9/2B, Putra Industrial Park Bukit Rahman Putra 47000 Sungai Buloh, Selangor.

Domino has two(2) production lines with a production capacity of 7,000MT per annum based on a one-shift production. Domino is currently operating at approximately 90% of its capacity, producing approximately 6,300MT per annum. It is capable of increasing its capacity to 11,000MT per annum when market demand increases.

The following sets out the products manufactured by Domino:-

Product	Application(s)
Bends	Pipes/Joints at deflected location
Tees	Branching pipes into different directions
Tapers	Reducing the diameter of the pipes
Adaptor Flange	Installation of valves
Collar	Pipes jointing

DOMINO – MANUFACTURING FLOWCHART PROCESS

