4 UPSCALING MANUFACTURING AND RELATED SERVICES

I. INTRODUCTION

4.01 The transformation of the manufacturing sector, and sustaining its competitiveness, remains among the major factors in determining the pace of economic activity in the country. During the Eighth Plan period, the manufacturing sector continued to contribute substantially to output growth, exports and employment creation despite the global economic slowdown in the early years of the Plan period, and an increasingly competitive international environment. Continuous policy improvements and initiatives were put in place to strengthen the sector in the light of greater competitiveness and integration of the world economy. These initiatives contributed towards providing a more conducive investment environment for both foreign and domestic investments, including the small and medium enterprises (SMEs).

4.02 For the Ninth Plan period, in meeting a more challenging and competitive global environment, a crucial goal will be to upscale the manufacturing sector towards higher value added activities and upgrade capacity in the provision of related services. The focus will be on transforming industrial businesses and complementary services, especially SMEs, into strong knowledge-intensive and value-creating entities. The promotion of technology- and innovation-driven strategies will be given increased priority. Greater emphasis will be placed on promoting investment in new areas of growth as well as reinforcing innovation capability and capacity to augment productivity and competitiveness. Of equal importance will be the promotion of greater industrial integration and international collaboration to further benefit from the increasing global deployment of production and services networks.

II. PROGRESS, 2001-2005

Performance by Industry

4.03 The manufacturing sector registered an average annual growth rate of 4.1 per cent during the Eighth Plan period. This was despite the contraction of the manufacturing sector by 5.9 per cent in 2001, and the downturn in the electrical and electronics (E&E) industry. The manufacturing sector contributed 31.4 per cent to gross domestic product (GDP), 80.5 per cent to total exports and 28.7 per cent to total employment in 2005, as shown in *Table 4-1*.

TABLE 4-1

MAJOR INDICATORS OF THE MANUFACTURING SECTOR, 2000-2010

Indicator	*2000*	*2005*	*2010*	*8MP*	*9MP*
Manufacturing Value Added (RM million in 1987 Prices)	67,250	82,394	113,717	361,816*	497,716*
Annual Growth Rate (%)	*18.3*	*4.9*	*7.5*	*4.1*	*6.7*
Share to GDP (%)	*31.9*	*31.4*	*32.4*	*30.8*	*31.8*
Share to Total Exports (%)	*85.2*	*80.5*	*83.4*	*82.4*	*82.5*
Share to Total Employment (%)	*27.7*	*28.7*	*30.0*	*27.6*	*29.4*

Source: Economic Planning Unit

Note: * Cumulative figure.

4.04 The resource-based industries registered an average annual growth of 5.0 per cent compared with 3.3 per cent for the non-resource-based industries, as shown in *Table 4-2*. The growth in the resource-based industries was contributed by rubber processing and products which grew at an average annual rate of 9.7 per cent, followed by industrial chemicals including fertilizers and plastic products at 8.3 per cent and vegetables, animal oils and fats at 7.6 per cent. In the non-resource-based industries, the main contributors to growth were transport equipment, which grew at an average annual rate of 7.5 per cent, followed by metal products at 7.1 per cent.

4.05 In terms of share to total manufacturing value added, the non-resource-based industries maintained the larger share at 54.2 per cent, with the *electronics industry* contributing 28.0 per cent. Despite a negative growth of 24.8 per cent in 2001, the electronics industry recorded an average growth of 3.0 per cent per annum during the Plan period. This was largely attributed to the sustained demand for semiconductors and other electronic components, especially from the United States of America (USA) and the Asia Pacific countries.

4.06 The structural changes in the E&E industry indicated a discerning trend towards high value added and high-technology projects as well as employment of highly skilled human resource. The capital investment per employee ratio increased from RM235,989 in 2001 to RM291,519 in 2005 while the managerial, technical and supervisory ratio rose from 20.2 per cent to 25.3 per cent for the same period.

TABLE 4-2

VALUE ADDED OF THE MANUFACTURING SECTOR, 2000-2010

Industry	RM million in 1987 Prices			% of Total			Average Annual Growth Rate (%)	
	2000	2005	2010	2000	2005	2010	8MP	9MP
Resource-Based	**28,210**	**35,990**	**48,152**	***41.9***	***43.7***	***42.3***	***5.0***	***6.0***
Vegetable, Animal Oils & Fats	2,526	3,639	5,614	*3.8*	*4.4*	*4.9*	*7.6*	*9.1*
Other Food Processing, Beverages & Tobacco	4,010	4,790	6,333	*6.0*	*5.8*	*5.6*	*3.6*	*5.7*
Wood Products including Furniture	2,934	2,972	3,761	*4.4*	*3.6*	*3.3*	*0.3*	*4.8*
Paper & Paper Products, Printing & Publishing	2,293	2,640	3,275	*3.4*	*3.2*	*2.9*	*2.9*	*4.4*
Industrial Chemicals including Fertilizers & Plastic Products	6,763	10,082	14,304	*10.1*	*12.2*	*12.6*	*8.3*	*7.2*
Petroleum Products including Crude Oil Refineries & Coal	4,521	5,254	7,501	*6.7*	*6.4*	*6.6*	*3.1*	*7.4*
Rubber Processing & Products	1,821	2,887	3,238	*2.7*	*3.5*	*2.8*	*9.7*	*2.3*
Non-Metallic Mineral Products	3,342	3,726	4,126	*5.0*	*4.5*	*3.6*	*2.2*	*2.1*
Non-Resource-Based	**37,878**	**44,662**	**63,035**	***56.3***	***54.2***	***55.4***	***3.3***	***7.1***
Textiles, Wearing Apparel & Leather	2,324	1,818	2,010	*3.5*	*2.2*	*1.8*	*-4.8*	*2.0*
Basic Metal Industry	594	675	852	*0.9*	*0.8*	*0.7*	*2.6*	*4.8*
Metal Products	2,879	4,060	6,589	*4.3*	*4.9*	*5.8*	*7.1*	*10.2*
Manufacture of Machinery except Electrical	3,063	3,447	3,480	*4.6*	*4.2*	*3.1*	*2.4*	*0.2*
Electronics	19,863	23,043	33,399	*29.5*	*28.0*	*29.4*	*3.0*	*7.7*
Electrical Machinery	1,738	952	1,161	*2.6*	*1.2*	*1.0*	*-11.3*	*4.1*
Transport Equipment	7,417	10,667	15,544	*11.0*	*12.9*	*13.7*	*7.5*	*7.8*
Others	**1,162**	**1,742**	**2,530**	***1.7***	***2.1***	***2.2***	***8.4***	***7.7***
Total	**67,250**	**82,394**	**113,717**	***100.0***	***100.0***	***100.0***	***4.1***	***6.7***
% to GDP				*31.9*	*31.4*	*32.4*		

Source: Economic Planning Unit

4.07 The *transport equipment subsector*, with growth emanating largely from the automotive industry, increased its contribution to total manufacturing value added from 11.0 per cent in 2000 to 12.9 per cent in 2005. The total installed production capacity of motor vehicles increased by 55.0 per cent from 572,000 units in 2000 to 891,000 units in 2005. There were parallel developments in the automotive components and parts industry with an increasing number of Malaysian companies participating in domestic and global supply chains. The *metal products industry* expanded at an average rate of 7.1 per cent per annum during the Plan period, maintaining its share in total manufacturing value added at 4.9 per cent.

Exports of Manufactured Goods

4.08 Exports of manufactured goods grew at an average rate of 6.2 per cent per annum despite the downturn in the electronics industry. Its share to total gross exports was sustained at more than 80.0 per cent. In terms of growth, the export of resource-based products grew at a much higher rate of 11.8 per cent per annum compared with the non-resource-based exports which grew at an average rate of 4.7 per cent, as shown in *Table 4-3*. The higher growth

TABLE 4-3

EXPORTS OF MANUFACTURED GOODS, 2000-2010

Industry	*RM million*			*% of Total*			*Average Annual Growth Rate (%)*	
	2000	*2005*	*2010*	*2000*	*2005*	*2010*	*8MP*	*9MP*
Resource-Based	**44,321**	**77,280**	**122,625**	***13.9***	***18.0***	***18.3***	***11.8***	***9.7***
Food	4,509	8,488	14,627	*1.4*	*2.0*	*2.2*	*13.5*	*11.5*
Beverages & Tobacco	1,207	1,701	2,406	*0.4*	*0.4*	*0.4*	*7.1*	*7.2*
Wood Products	6,801	8,860	12,503	*2.1*	*2.1*	*1.9*	*5.4*	*7.1*
Paper & Paper Products	1,397	2,073	2,913	*0.4*	*0.5*	*0.4*	*8.2*	*7.0*
Petroleum Products	8,131	16,729	26,342	*2.6*	*3.9*	*3.9*	*15.5*	*9.5*
Chemical & Chemical Products	15,011	29,718	48,678	*4.7*	*6.9*	*7.3*	*14.6*	*10.4*
Rubber Products	4,695	6,777	11,261	*1.5*	*1.6*	*1.7*	*7.6*	*10.7*
Non-Metallic Mineral Products	2,571	2,934	3,895	*0.8*	*0.7*	*0.6*	*2.7*	*5.8*
Non-Resource-Based	**252,383**	**317,449**	**491,515**	***79.4***	***73.8***	***73.3***	***4.7***	***9.1***
Textiles, Clothing & Footwear	10,433	10,520	13,715	*3.3*	*2.4*	*2.0*	*0.1*	*5.4*
Manufactures of Metal	8,618	17,157	27,678	*2.7*	*4.0*	*4.1*	*14.8*	*10.0*
Electrical & Electronic Products	230,429	282,779	439,626	*72.5*	*65.8*	*65.5*	*4.2*	*9.2*
Transport Equipment	2,903	6,993	10,496	*0.9*	*1.6*	*1.6*	*19.2*	*8.5*
Others	**21,205**	**35,144**	**56,627**	***6.7***	***8.2***	***8.4***	***10.6***	***10.0***
Total	**317,908**	**429,873**	**670,767**	***100.0***	***100.0***	***100.0***	***6.2***	***9.3***
Total (USD)[1]	83,660	113,124	176,518					
% of Total Gross Exports	*85.2*	*80.5*	*83.4*					

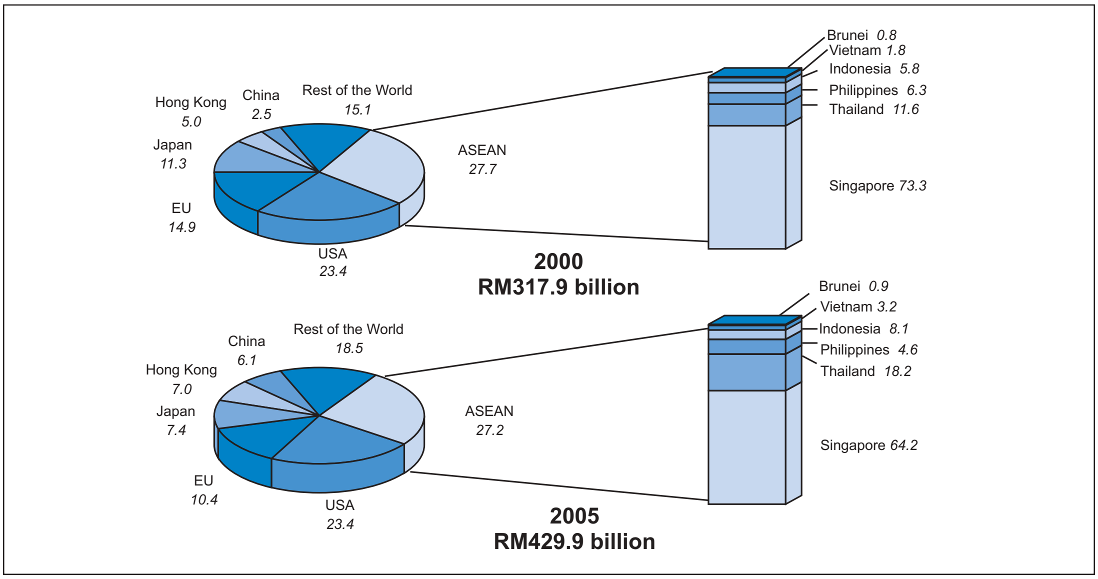
Source: Economic Planning Unit
Note: [1] Based on the exchange rate of RM3.80 to USD1

in exports of resource-based products indicated the further diversification and expansion of the country's export base as well as growing external demand. In terms of share, the E&E products maintained its position as the largest contributor to total exports.

4.09 The major markets for manufactured goods were the Association of South-East Asian Nations (ASEAN), followed by the USA, the European Union (EU), Japan, Hong Kong and People's Republic of China (China), as shown in *Chart 4-1*. The main exports included E&E products, chemical and chemical products and machinery, appliances and parts. Greater diversification of Malaysia's export markets was seen with inroads made into China, West Asia, South Asia as well as the new markets of Central and Latin America and Eastern Europe.

CHART 4-1

MAJOR EXPORT DESTINATIONS FOR MANUFACTURED PRODUCTS, 2000-2005 (%)



Source: Department of Statistics

4.10 Recognising the importance of branding in the marketing as well as customer acceptance of goods in major export markets, assistance was made available to develop and promote Malaysian brands. This included the provision of grant assistance for brand development as well as double deduction for expenses incurred in the promotion of Malaysian brands overseas. A fund totalling RM200 million was established under the Malaysia External Trade Development Corporation (MATRADE) to provide matching grants for the purpose of developing and upgrading local brands for overseas markets.

Investment in the Manufacturing Sector

4.11 A total of 4,812 manufacturing projects amounting to RM132.6 billion was approved, as shown in *Table 4-4*. New projects accounted for RM82.4 billion or 62.0 per cent of total investments and the remainder for the expansion and diversification of existing projects. The non-resource-based sector continued to attract high levels of investment, particularly the E&E industry, followed by basic metal and transport equipment. About 72.0 per cent of the approved projects commenced production while another 25.0 per cent were in various stages of implementation. The main sources of foreign investment were the USA, Germany and Japan.

4.12 During the Plan period, a number of policy measures and incentives were introduced to enhance the business and investment climate. These included the liberalisation of equity in the manufacturing sector whereby foreign companies were allowed to hold 100 per cent equity in new projects as well as in expansion and diversification projects. The Government also liberalised the policy on the employment of expatriates and introduced customised pre-packaged incentives to attract quality projects in strategic areas.

4.13 Manufacturing related services (MRS) were promoted to facilitate the development of essential support activities for the manufacturing sector. With the country's strong infostructure and infrastructure, a well-educated and multilingual work force, large foreign companies and many multinational corporations (MNCs) found Malaysia to be an attractive place to locate their regional centres for business support activities and services. During the Plan period, 1,052 regional establishments were approved, which included 67 Operational Headquarters (OHQs), 182 International Procurement Centres (IPCs), 29 Regional Distribution Centres (RDCs), 579 Representative Offices and 195 Regional Offices (ROs).

4.14 The banking sector remained an important source of funds to the manufacturing sector, accounting for 10.3 per cent of the total approved loans from banking and financial institutions during the Plan period. Loans were extended mainly to industries producing wood and wood products, iron and steel products, electrical machinery appliances as well as food, beverages and tobacco.

Employment in the Manufacturing Sector

4.15 The manufacturing sector accounted for about one third of total employment and 27.6 per cent of total jobs created during the Plan period. Total employment in the sector grew at an average annual rate of 4.1 per cent increasing from

TABLE 4-4

APPROVED MANUFACTURING PROJECTS BY INDUSTRY, 2001-2005

Industry	Number of Projects	Capital Investment							
		RM million			% of Total By Ownership		% of Total By Industry		
		Domestic	Foreign	Total	Domestic	Foreign	Domestic	Foreign	Total
Resource-Based	**1,948**	**25,612**	**23,903**	**49,516**	***51.7***	***48.3***	***46.2***	***31.0***	***37.3***
Food Manufacturing	369	3,469	2,303	5,772	*60.1*	*39.9*	*6.3*	*3.0*	*4.4*
Beverages & Tobacco	26	142	470	612	*23.2*	*76.8*	*0.3*	*0.6*	*0.5*
Wood & Wood Products	193	2,267	943	3,210	*70.6*	*29.4*	*4.1*	*1.2*	*2.4*
Furniture & Fixtures	233	1,363	297	1,659	*82.1*	*17.9*	*2.5*	*0.4*	*1.3*
Paper, Printing & Publishing	123	6,418	4,850	11,268	*57.0*	*43.0*	*11.6*	*6.3*	*8.5*
Chemicals & Chemical Products	288	5,004	3,025	8,029	*62.3*	*37.7*	*9.0*	*3.9*	*6.1*
Petroleum Products	61	1,787	6,289	8,076	*22.1*	*77.9*	*3.2*	*8.2*	*6.1*
Natural Gas	2	50	0	50	*100.0*	*0.0*	*0.1*	*0.0*	*0.0*
Rubber Products	144	1,442	963	2,405	*60.0*	*40.0*	*2.6*	*1.2*	*1.8*
Plastic Products	358	2,050	1,760	3,810	*53.8*	*46.2*	*3.7*	*2.3*	*2.9*
Non-Metallic Mineral Products	151	1,620	3,005	4,625	*35.0*	*65.0*	*2.9*	*3.9*	*3.5*
Non-Resource-Based	**2,771**	**29,303**	**53,068**	**82,371**	***35.6***	***64.4***	***52.8***	***68.8***	***62.1***
Textiles & Textile Products	178	1,171	947	2,117	*55.3*	*44.7*	*2.1*	*1.2*	*1.6*
Leather & Leather Products	12	57	17	74	*76.8*	*23.2*	*0.1*	*0.0*	*0.1*
Basic Metal Products	163	9,308	5,502	14,810	*62.8*	*37.2*	*16.8*	*7.1*	*11.2*
Fabricated Metal Products	487	2,059	2,177	4,236	*48.6*	*51.4*	*3.7*	*2.8*	*3.2*
Machinery Manufacturing	443	1,961	1,535	3,496	*56.1*	*43.9*	*3.5*	*2.0*	*2.6*
Electronics & Electrical Products	1,051	8,084	35,290	43,374	*18.6*	*81.4*	*14.6*	*45.7*	*32.7*
Transport Equipment	353	6,157	5,388	11,545	*53.3*	*46.7*	*11.1*	*7.0*	*8.7*
Scientific & Measuring Equipment	84	506	2,212	2,718	*18.6*	*81.4*	*0.9*	*2.9*	*2.0*
Others	**93**	**559**	**181**	**740**	***75.5***	***24.5***	***1.0***	***0.2***	***0.6***
Total	**4,812**	**55,474**	**77,152**	**132,626**	***41.8***	***58.2***	***100.0***	***100.0***	***100.0***

Source: Malaysian Industrial Development Authority (MIDA)

2.6 million in 2000 to 3.1 million in 2005, as shown in *Table 4-5*. The employment in non-resource-based industries grew at 4.3 per cent per annum, creating 308,900 new jobs compared with resource-based industries at 3.7 per cent, accounting for 237,100 new jobs. Employment creation in the non-resource-based industries was mainly attributed to the expansion in the E&E, transport equipment as well as basic metal and metal products industries.

4.16 The on-going transformation of the manufacturing sector to high value added and knowledge-intensive industries raised the demand for human resource with tertiary qualification as well as vocational and technical training. On the supply side, various training, vocational and educational institutions expanded their capacity. The state skills development centres (SDCs) and youth skills training centres as well as other advanced skills institutions provided technical skills-upgrading courses at basic, intermediate and advanced levels. The SDCs worked closely with polytechnics as well as the private sector to ensure relevancy and marketability of the skill sets acquired.

Development of Small and Medium Enterprises

4.17 The Eighth Plan emphasised the importance of SMEs in enhancing the dynamism and competitiveness of the manufacturing sector. Based on the Census of Establishments and Enterprises 2005, SMEs in the manufacturing sector, totalling 33,113 establishments, contributed 29.0 per cent of total manufacturing output, 31.0 per cent of value added and 44.0 per cent of employment. While overall performance improved, there were still areas of concern such as access to export markets, inadequate technological capability and low adoption of enabling technologies.

4.18 Considerable attention was given to the provision of industrial infrastructure and amenities to facilitate the expansion of SME activities. A total of RM652.2 million was provided for the establishment and expansion of SME industrial parks, comprising factory units and incubator facilities at key locations throughout the country.

4.19 Various programmes were undertaken to develop Bumiputera entrepreneurs as part of the efforts to create a viable and competitive Bumiputera Commercial and Industrial Community (BCIC). Government agencies and a number of government-linked companies (GLCs) assisted in the development of ancillary and supporting industries through their own vendor programmes, which contributed to the development of many competent and competitive Bumiputera SMEs. During the Plan period, anchor companies, including *Perusahaan Otomobil*

Nasional Berhad (PROTON), *Petroliam Nasional Berhad* (PETRONAS), *Tenaga Nasional Berhad* (TNB), and a number of MNCs, created more than 200 first-tier vendor companies, involved in manufacturing and related activities.

4.20 A number of training programmes for SMEs were implemented to improve their resource planning, management capability, financial management and human resource development as well as upgrading marketing and technical skills. Various grant and loan schemes were provided for business planning, product and quality improvement as well as marketing and promotion and the adoption of information and communications technology (ICT) processes.

4.21 To ensure adequate funding for SMEs, the Government expanded funds, covering soft loans and grants to facilitate the establishment of new and upgrading of existing businesses. In addition, the SME Bank was established in 2005 to provide comprehensive financing packages to meet the varied financial needs of SMEs. In terms of venture capital, the Malaysia Venture Capital Management Bhd. (MAVCAP) and the Malaysia Technology Development Corporation (MTDC) continued to provide early stage financing to potential start-up companies involved in high-technology activities.

Industrial Technology and R&D

4.22 Research and development (R&D) continued to be an important contributor towards industrial innovation and competitiveness. Various funding schemes were provided for R&D initiatives by the public and private sectors in areas such as advanced manufacturing, advanced materials, biotechnology, environmental technology, electronics, ICT and photonics. More than RM830 million was expended under the Intensification of Research in Priority Areas (IRPA) for direct public sector involvement in R&D, whereas a total of RM430 million was provided to enhance private sector R&D through the Industry Research and Development Grant Scheme (IGS), the Multimedia Super Corridor (MSC) R&D Grant Scheme (MGS) and Demonstrator Applications Grant Scheme (DAGS). In addition to the Commercialisation of Research and Development Fund (CRDF), the double deduction for R&D as well as special incentives for researchers and companies to commercialise research findings were introduced.

III. PROSPECTS, 2006-2010

4.23 The Ninth Plan period will be more challenging to the industrial development process, in the face of an increasingly globalised and competitive world economic environment. Concomitant with this is the global trend towards greater concentration of major growth and high-technology industries, especially the automotive, biotechnology and E&E industries, among key global players. This increased industrial consolidation and a more dynamic global environment will continue to generate more intense competition for investment opportunities worldwide. As such, Malaysian companies too will need to identify and build upon niche products and services for specific markets. Among others, Malaysian industry must forge and intensify strategic integration with foreign affiliates, including joint ventures, mergers and acquisitions in designated high value added and high-technology industrial activities and related services. These will provide a wider platform for Malaysian industries to generate greater inter-sectoral and intra-sectoral linkages as well as integrate into regional and global networks of production, investment and services.

Growth Prospects of the Manufacturing Sector

4.24 During the Ninth Plan period, the prime focus will be to ensure robust and sustainable growth as well as competitiveness of the manufacturing sector. The sector is targeted to grow at an average rate of 6.7 per cent per annum. The impetus for overall growth of, and investment in, the sector is expected to emanate largely from technology- and innovation-driven industries, which will in turn contribute to greater exports, income and employment generating opportunities.

4.25 With the relatively higher growth rate, the share of manufacturing to GDP is projected to increase from 30.8 per cent for the Eighth Plan to 31.8 per cent in the Ninth Plan. This will require substantial investment in new and emerging manufacturing activities as well as MRS. Apart from attracting foreign investment, there is also a need to accelerate growth in domestic private investment. The private sector and GLCs in particular, will be encouraged to take up new investment opportunities, build up indigenous capability to utilise advanced technology as well as develop niche products and services that will generate new demand and expand markets.

4.26 The promotion of foreign investment will continue to be a priority as opportunities arise from greater intra-regional trade and investment in response to further regional and global liberalisation. In this regard, promotional efforts will be intensified to leverage on Malaysia's good track record in macroeconomic management, advanced infrastructure and the favourable foreign investment environment to attract more quality investments, particularly in knowledge-based and technology-intensive industries.

4.27 The policy thrust of the Ninth Plan period is to intensify the development of the resource-based industries, with the aim to optimise and value add to the utilisation of the country's natural resources. The further expansion of downstream activities, encompassing petrochemicals, pulp and paper, rubber, wood and palm oil products as well as the food industries, will contribute towards the manufacture of higher value added products as well as promote greater inter-industry and inter-sectoral linkages.

4.28 The growth of the manufacturing sector will continue to be export-led, with the export of manufactured goods expected to expand by 9.3 per cent per annum during the Ninth Plan. The share of manufactured exports to total exports is expected to expand from 80.5 per cent in 2005 to 83.4 per cent in 2010. The share of resource-based exports is anticipated to increase further, particularly with the renewed focus on the development of agro-based industries arising from new technology infusion from biotechnology as well as new product development emanating from production of *halal* products and services. The non-resource-based products will continue to lead overall manufacturing exports, especially E&E products.

4.29 In line with the changes in global and regional developments as well as the on-going restructuring of the domestic industry, the Third Industrial Master Plan (IMP3) will provide the overall development framework for the manufacturing sector and detailed subsector plans for the period 2006-2020. Notwithstanding this, the policy thrusts of the Ninth Plan to accelerate industrial upgrading and sustain competitiveness will include the following:

- *strengthening strategic integration with the global economy, particularly through international collaboration in high value added and high-technology industries;*
- *promoting new sources of industrial growth and wealth creation;*
- *building up an efficient and competitive related services industry to enhance the performance of the manufacturing sector;*
- *providing more focused incentives for high value added industries;*
- *enhancing Bumiputera participation in manufacturing;*
- *developing innovation-driven SMEs to compete in global markets;*
- *promoting cross border investments to benefit from increasing global deployment of production and marketing activities; and*
- *enhancing the supply and quality of skilled human resources required for technology and industrial upgrading.*

Strengthening Strategic Integration with the Global Economy

4.30 During the Ninth Plan period, Malaysia will step up efforts to enhance its global position as a trading nation as well as raise the level of competitiveness of its manufacturing sector. In this regard, efforts will be undertaken to expand the scope and coverage of its regional arrangements such as free trade agreements (FTAs) and economic partnership agreements (EPAs) to ensure greater access to markets, trade and investment opportunities. As substantive outbound and inter-regional investments intensify, contributed largely by competition as well as integration of global production and marketing networks worldwide, Malaysian firms will also need to be proactive and seek new investment opportunities locally and abroad. Focus must be given to the development of soft infrastructure, including raising the quality of human capital, R&D capability as well as management system.

4.31 In the rapidly changing global environment and the increasing trend towards growing strategic alliances and networking among a number of international players, it will become imperative for Malaysian investors to form greater partnerships with foreign affiliates, as well as venture out on their own, to make inroads into targeted growth areas both at home and abroad. This will enable Malaysian industries to become a crucial part of the international economic chain and produce goods and services that create new demand and market opportunities. In this regard, initiatives to facilitate industries to meet these new challenges will include:

- facilitating investment in new sources of industrial growth and wealth creation, that require extensive global partnering to reap economies of scale, expand exports and increase access to markets;
- promoting the expansion of foreign direct investment (FDI) in the country as well as facilitating joint ventures and strategic alliances between Malaysian firms and MNCs;
- assisting domestic industries to enhance core competencies, especially in ICT design and engineering skills as well as management and technical expertise to benefit from regional and international production networks;
- developing and pursuing high standards of product quality and service performance to sustain market share and create new market opportunities; and
- building the necessary infrastructure and facilities including dedicated industrial parks in specific locations that have the potential to attract investment.

4.32 These efforts will expand domestic investments and anchor strong global Malaysian companies in selected industries to strengthen the country's position in the international value chain. Simultaneously, the integration with global players will provide for capacity and capability building as well as extensive multiplier effects and spin-offs in the domestic economy.

Promoting New Sources of Industrial Growth

4.33 While building upon established clusters of industries to produce next generation products, efforts will be made to enhance the development of new sources of growth, largely science-based and innovation-based activities, especially biotechnology and ICT industries to diversify and broaden the manufacturing base. With competitive pressures, it will be vital to harness technology and innovation for improved and new product development and related services to cater for existing and potential markets. Among the key factors, will be to expand existing and create new mechanisms for public-private sector collaboration and build a critical mass of innovating firms. This will, among others, require augmenting capabilities in technology development and management, usage of knowledge-intensive applications, networking and accelerating industrial skills upgrading.

4.34 During the Ninth Plan, an essential component of industrial policy will be to reinforce efforts towards the manufacture of higher value added resource-based products. The established industrial clusters, largely the petrochemicals, and agro-based subsectors, are expected to identify new and build specific competencies. The development strategies will include encouraging manufacturers to produce high quality niche products at competitive prices and expand into regional and global markets.

4.35 Advanced manufacturing technology will continue to enhance overall industrial productivity and competitiveness as well as facilitate strategic development of high-technology industries. The new sources of growth in advanced manufacturing include robotics, smart sensors, intelligent software, high-technology packaging, automation and nano-processing. In this regard, R&D will be intensified and application in key areas will be undertaken.

4.36 The shift into high-technology industrial activities will increase the demand for new and advanced materials made from petrochemical products. In this regard, measures will be undertaken to further develop the *petrochemical industry*, by expanding the capacity of feedstock and the range of downstream products to meet increasing domestic and global demand. Moving along and up the value chain, linkages that enhance the growth prospects of petroleum and gas resources will be further strengthened. Products along the value chain that have growth prospects include those petrochemical-based products that are inputs to the parts and component industries in the E&E and automotive subsectors.

4.37 The expansion of existing and new petrochemical industries in the Kertih-Gebeng and Pasir Gudang-Tanjung Langsat corridor will further enhance growth-creating activities along and up the value chain. In this context, an important offshoot will be the establishment of extended facilities, including ancillary support activities and related services, located in the Kertih-Gebeng vicinity to cater for downstream activities.

4.38 To accelerate the development of the country's nascent biotechnology industry, increased efforts will be undertaken to generate new investment opportunities for local entrepreneurs as well as attract world class biotechnology companies to Malaysia. Customised fiscal and non-fiscal incentives will be provided to enhance collaborative R&D, special skills development as well as global partnerships. A global marketing strategy will be formulated to build brand recognition for Malaysian biotechnology products and applications as well as generate new businesses through strategic alliances and joint ventures.

4.39 The *electronics products industry* will continue to be the main subsector for industrial growth and innovation during the Ninth Plan period with its value added expected to grow at an average annual rate of 7.7 per cent. The global shift towards extensive application of electronics is expected to continue unabated across all industries and services and especially with new developments in the ICT industries. This will be particularly significant in areas of automation, miniaturisation, digitisation and in various multimedia applications. While the contribution of MNCs in the E&E industry will remain significant, local investments as well as technological capabilities in existing and new E&E activities will be further enhanced. These will leverage on developments within the cybercities of Bayan Lepas, Pulau Pinang and Kulim Hi-Tech Park in Kedah.

4.40 MNCs in the E&E industry are expected to continue to source parts and components locally as well as outsource some of their non-core activities, thus contributing to higher value added activities. Domestic manufacturers will be encouraged to focus on improving the sophistication level of their products, in terms of quality, functionality and design. With increased collaboration among local firms, research institutions and participating MNCs, the Government will continue to facilitate the development of relevant skill sets and expertise, technology know-how and R&D to move the local E&E industry further up the value chain.

4.41 During the Plan period, shared services and outsourcing (SSO) will be positioned as a major new source of growth. The worldwide market for SSO is estimated at US$600 billion by 2008, more than half of which is expected to be implemented through third-party outsourcing or joint ventures. Considering that Malaysia has an edge in global SSO, increasing emphasis will be given to attracting more global players as well as encouraging the participation of the local industry in potential markets. Towards this end, international promotion and marketing will be intensified, focusing on attracting large-scale centres from energy, finance, logistics, manufacturing and healthcare sectors.

4.42 A major strategy includes attracting local companies to undertake high end SSO-related services such as marketing, project management, product development and supply chain management. At the same time, domestic demand of SSO would also be stimulated in order to help the local outsourcing industry reach its critical mass. In order to further strengthen the SSO cluster, assistance such as access to funds for joint ventures as well as mergers and acquisitions will be made available. This in turn will enable local outsourcing firms to acquire world-class competencies, access to greater offshore markets and upscale operational size. Further, the legal framework for the intellectual property rights protection will be strengthened to provide greater trust in outsourcing.

4.43 To expand the range of new products and appliances in the industry, greater emphasis will be placed on the utilisation and application of new and advanced materials. Local research as well as design capacity and capability will be further expanded with a view to developing new and improved components in nanoelectronics and nanomaterials for microelectronics devices and various other industrial applications.

4.44 An area with tremendous growth prospects is the ICT-related manufacturing and services industry, focusing on creativity and digital content development. This includes computer animation, digital games, mobile applications and services, interactive television and digital archiving. As such, various incentives will be considered to stimulate and diversify the design, functionality as well as production of cost-effective fixed-line and mobile solutions and applications for both the local and global markets.

4.45 In order to promote the automotive industry as a competitive subsector, the Government will launch the National Automotive Policy (NAP) in 2006. The NAP will provide clear and strategic directions to develop a resilient and vibrant automotive and components industry. Policies will be geared towards enabling industry players to achieve economies of scale, improve overall cost-effectiveness, enhance industrial linkages and increase export focus. The Government will provide appropriate fiscal and financial incentives to support these policies that will in turn enable the automotive industry to move up the value chain and expand into higher value added products and services. Among the measures include the development of existing and new automotive clusters, the build up of technical, engineering and R&D capabilities as well as the establishment of a special RM500 million Automotive Development Fund.

4.46 During the Ninth Plan, greater efforts will be undertaken in the *machinery and equipment (M&E) industry* to enhance domestic capability to design and fabricate machines and tools for the mechanisation and automation needs of the economy through the provision of incentives and financing schemes. Promotional efforts will be intensified to attract foreign high-technology and specialised M&E manufacturers to set up base in Malaysia. Existing incentives for regional establishments will be improved while, new incentive packages will be considered, including the setting up of machinery parks within free zone facilities, with a view to making Malaysia a centre for M&E activities in the region.

4.47 The successful establishment of the M&E industry will depend mainly on the ability of the local engineering industry to supply parts, components and modules as well as the availability of highly qualified technical human resource. M&E manufacturers worldwide are turning to global outsourcing for machinery components and modules. Thus, increased efforts will be made to encourage local companies in the engineering support industry to upgrade their technology and production capabilities especially to participate in extensive outsourcing activities.

4.48 As part of the strategy to promote knowledge-based and high-technology industries, the *aerospace industry* will be further developed. Leveraging on the existing market niche in the manufacturing of small aircrafts, parts and components as well as maintenance, repair and overhaul (MRO), increased technical collaborations between local and global manufacturers will be continued in order to develop world class standards and quality in the industry. Apart from this, the implementation of the National Satellite Programme will be further intensified as part of the process to build up local capabilities and production technologies as well as improve R&D and design work. The National Space Policy will be formulated to provide strategic directions to enhance the development of the local aerospace industry and identify development of potential investment opportunities.

4.49 New developments in the *defence industry* are expected to spur the growth of other industries including aerospace, automotive and ICT industries involving the design, engineering and manufacture of a wide range of products and components. To enhance the capability of local manufacturers, increased joint ventures and collaboration with foreign partners will be encouraged. Initiatives will be undertaken to utilise available facilities such as the Sultan Abdul Aziz Shah Airport in Subang, Selangor for MRO activities for military and commercial aircrafts, particularly for the Asia Pacific region.

4.50 There are vast investment opportunities arising from high value added, technology-intensive activities in the marine industry that remain untapped. These include the building of ships, boats, vessels, ferries and trawlers; maintenance, repairs and overhaul; fabricating of leisure crafts, yachts and buoys; as well as heavy engineering works such as construction and fabrication of offshore equipment. The Government will continue to provide various fiscal and financial incentives to boost the development of the shipping industry.

4.51 The *handicraft industry*, including *batik* and *songket* as well as traditional and costume jewellery products, will be further developed. The private sector is expected to take on a more active role in modernising the handicraft industry, improving product design and quality, as well as intensifying marketing and promotion. *Perbadanan Kemajuan Kraftangan Malaysia*, the *Institut Kraftangan Negara* and other relevant agencies will continue to provide enterprising individuals and firms with the necessary technical, business and other support services. R&D activities will be intensified in the production of specialised fibres as alternative raw materials in high value added *batik* and *songket* making. Efforts will also be undertaken to promote the usage of *batik* and *songket* in the high-end fashion and design industry, both in local and international markets.

Services Support for the Manufacturing Sector

4.52 In order for the country to continue to maximise growth opportunities from manufacturing, focus will be given to the expansion of supplementary business and services industries. The availability, quality and functionality of the essential support services will provide the platform for a multitude of forward and backward linkages further contributing to the value added economic activities. The wide range of activities will have to commensurate with the growing and varied demands of increasingly complex production, processes, as well as distribution, marketing and R&D operations in the manufacturing sector. Among others, it will be necessary to build up the requisite infrastructure, infostructure and core competencies in key areas such as integrated transport and logistics, marketing and distribution, R&D and innovation as well as specialised engineering and product design. Towards this end, the strategic initiatives will include:

- attracting more OHQs, RDCs, IPCs and ROs so that high value added activities in the supply chain such as R&D, design and product development as well as management, distribution and logistics support can be conducted in Malaysia;
- encouraging investments in integrated global transport, logistics links and distribution centres to build capability and participation in the whole spectrum of businesses that support and complement manufacturing activities and services up and along the value chain;

- facilitating contract manufacturers to become own design manufacturers (ODM) and own brand manufacturers (OBM) that target domestic and global operations;
- strengthening the development of information hardware, promoting electronic documentation, encouraging e-commerce and improving the Internet environment;
- creating a conducive environment for the accumulation and dissemination of new knowledge and reinforcing the protection of intellectual property rights;
- strengthening domestic R&D, technical and engineering capabilities to reap the benefits of innovation and knowledge applications, and where appropriate, to collaborate with world class large corporations and research establishments;
- enhancing capacity building by creating a critical mass of expertise in technology upgrading at research institutions and industrial training institutions as well as encouraging MNCs to relocate their training institutions or product development centres to Malaysia;
- facilitating provision of essential infrastructure in strategic locations that attract quality investments in MRS industry; and
- ensuring adequate capacity to build up standards and accreditation, product testing and quality control activities benchmarked against international requirements.

4.53 The increasing trend of outsourcing of core as well as non-core activities by large companies, especially MNCs, will open up greater investment opportunities in the provision of support services. Malaysian companies, particularly SMEs, will be encouraged to seek new and improved investment opportunities, especially in supply chain management and integrated logistics activities and services. For this purpose, a Services Sector Development Fund for SMEs will be set up to assist potential entrepreneurs upgrade their technical and professional skills. In addition, relevant agencies, especially the Ministry of International Trade and Industry (MITI) and Malaysian Industrial Development Authority (MIDA) will be able to provide full institutional support to the MRS industry when the MITI and the Agencies Trade and Industry Information Exchange (MATRIIX) programme is fully operational as a one stop service centre to promote trade facilitation services and assist in resolving operational problems.

Branding

4.54 To sustain demand for Malaysian brands, efforts will be intensified to ensure quality and specialisation as well as consistency with changing lifestyles of discerning consumers. Various efforts including the provision of incentives and grants for brand development as well as targeted marketing and promotion will be continued. Increased focus will also be on enhancing awareness of the industry players, particularly SMEs, on new and emerging aspects such as innovation, acculturation, advertising and the rapidly changing medium of communications in order to strengthen local brands and build market share. The presence of local and foreign hypermarkets and large retail outlets provides an additional avenue for domestic firms, especially SMEs, to market their products and brands overseas.

Enhancing Bumiputera Participation

4.55 During the Ninth Plan, the Government will continue to accord high priority to the creation of a strong and viable BCIC. Public enterprises and trust agencies as well as GLCs will intensify efforts to facilitate greater Bumiputera investment in existing and, more importantly, new areas of wealth creation, technology transfer and skills development. The GLCs in particular will be encouraged to leverage on their experience and expertise to build a larger pool of Bumiputera entrepreneurs capable of going global.

4.56 In the light of the enhanced role and dynamism of the industrial sector during the Ninth Plan and beyond, there are increasingly good prospects for greater Bumiputera involvement. Efforts will be directed at encouraging Bumiputera entrepreneurs to invest in a wide range of manufacturing activities to further widen and diversify their base. Greater emphasis will be given to facilitating investment in new areas of growth such as biotechnology, ICT, creative industries including digital content, high-end electronics, specialised automotive parts and components, and high-value resource-based industries as well as the provision of professional services.

4.57 Increased efforts will be undertaken to create Bumiputera technopreneurs through collaboration with research institutions and the larger technology-based enterprises. This will be with a view to fostering and creating an innovative Bumiputera entrepreneurial community participating in the development of potential technologies for commercialisation and wealth creation. Priority will also be given to the nurturing of Bumiputera enterprises as partners to tap into new and diverse opportunities arising from outsourcing by MNCs and GLCs. Programmes to improve product development and branding, quality improvement as well as R&D and marketing capability will be expanded.

4.58 Greater focus will continue to be given to the development of Bumiputera SMEs, as their advancement is an integral part of the broader strategy of building the BCIC. Apart from ensuring coordinated efforts in the mobilisation and utilisation of resources and expertise for the development of Bumiputera SMEs, emphasis will be placed on the promotion of efficient and competitive enterprises able to withstand the rigours of the market. Towards this end, the capacity and capability of Bumiputera SMEs will be further developed. Among others, the role of the *Institut Keusahawanan Negara* as a centre for coordinated entrepreneurial and professional training will be enhanced. Apart from this, access to technology, finance and markets as well as strategic locations and enterprising businesses will be improved.

Providing More Focused Incentives for High Value Added Industries

4.59 The Government will increase its efforts to promote investment in high value added and knowledge-intensive industries. In this context, the pre-packaged or customised incentives for specific industries, particularly in new growth areas, will be further improved. These customised benefits will cover areas such as R&D and technology transfer, job creation, expansion of new businesses and linkages as well as intellectual property creation, especially in E&E, digital content and biotechnology industries. In addition, existing companies will also be encouraged to expand and diversify into high-end industries as well as move into related services.

4.60 As a major effort to promote investments in new growth areas, a RM600 million Strategic Investment Fund will be established under the existing pre-packaged incentive scheme. The fund will be utilised to attract quality investments in projects which are knowledge-intensive, labour saving and have high-technology content involving R&D, intellectual property (IP) development as well as human capital enhancement.

4.61 Taking cognisance of the increasing technology and knowledge content in manufacturing industries, priority will be accorded to incentives to upgrade skills that promote intensive knowledge applications in production processes and related services, especially among SMEs. In this regard, industrial skills upgrading will focus, among others, on ICT integration and utilisation of bioinformatics that infuse the knowledge content into industries as well as e-management and virtual engineering services for high-end design activities. For these purposes, a total of RM463 million will be provided.

4.62 The MRS industry will continue to be an important area of investment opportunities, particularly for SMEs. Within the manufacturing sector, the MRS will form the new backbone of rapidly changing integrated production systems, which cut across geographical and spatial distances. Increased resources, including incentives, will be made available to promote the development of supporting infrastructure such as business services, transport, communications and logistics, as well as training funds to enhance the requisite technical skills. For SMEs in particular, soft loans amounting to RM220 million will be allocated, among others, for the purchase of new machinery and equipment required to participate in the expanding MRS sector.

4.63 As part of the efforts to ensure a strong and efficient industrial structure, measures will also include the establishment of an Automation Fund as well as the re-establishment of the Industrial Adjustment Fund (IAF). The Automation Fund will be dedicated to modernising and automating manufacturing processes with a view to improving efficiency, quality and the utilisation of labour-saving technologies. The IAF will assist industries, facing intense competition from the liberalisation measures under ASEAN Free Trade Area (AFTA) and FTAs, to rationalise and streamline their operations.

4.64 Measures will continue to be taken to improve the business environment to attract new investments and promote the growth of existing companies. Further initiatives will include measures to reduce cost of doing business through improved mechanisms and processes, provide for integrated business planning and financing programmes to stimulate industrial investment as well as review investment-related laws and regulations that may impede development. Public-private sector dialogues and deliberations will be encouraged to ensure expeditious resolution of problems and issues.

Innovation-Driven SMEs

4.65 The strategy will be to focus on creating high performance and resilient SMEs, equipped with strong technical and innovation capability as well as managerial and business skills to realise new job opportunities and improved market access. This will be with the view to strengthening the capacity and capability of domestic SMEs to produce innovative as well as quality products and services at competitive costs and integrate into the international supply chain.

4.66 Inter-firm linkages among and between SMEs as well as with large domestic companies, including GLCs and foreign entities, will be further strengthened to enable SMEs to become more competitive, innovative and reliable suppliers for global outsourcing networks thereby facilitating entry into new export markets. In this regard, existing programmes will be intensified and new ones initiated to further develop advanced professional and managerial skills among SMEs. These measures, aimed at the internationalisation of operations and businesses, will in turn add value to products and services as well as generate new market opportunities for the SMEs.

4.67 Another strategy will be building a platform for enterprise start-ups and incubation that will create the pool of new and innovation-driven entrepreneurs needed to sprout new businesses and services. Towards this end, the Government will promote the setting up of technology incubators for the purpose of nurturing new firms and entrepreneurs as well as expanding capacity for innovations and related services.

4.68 Efforts will be undertaken to assist SMEs to further develop technical skills, especially in generating innovation and creating economic value from knowledge applications. The Small and Medium Industries Development Corporation (SMIDEC), along with other agencies and the private sector, will review the on-going and devise new training and apprenticeship programmes to incorporate knowledge management plans and strategies as well as knowledge-based applications and practices among SMEs.

4.69 On-going entrepreneurship programmes, including advisory and outreach services, will be expanded to equip SMEs with new and improved management and business practices and methods in production, quality improvement, marketing and distribution in order to raise productivity, efficiency and profit levels. New schemes, including increased automation, business coaching as well as provision of technical skills to assist SMEs to develop, commercialise and market innovative ideas will also be implemented.

4.70 Increased funding initiatives will be undertaken to support the development of SMEs. To complement the efforts of commercial banks as well as development financial institutions, the SME Bank will devise new approaches, and the provision of more integrated assistance packages to SMEs involving both financial, including cash-flow based funding, and related business support services. In addition, increased venture capital will be made available to finance start-up technology companies, especially to promote the commercialisation of potential research findings and the sprouting of innovative products and services.

4.71 In terms of institutional coordination, the National SME Development Council provides the strategic framework for more focused and coordinated inter-agency efforts on SME development. Emphasis will be aligned towards strengthening the requisite financial and non-financial infrastructure, including skills upgrading as well as enhancing access to financing.

4.72 The Government will continue with the provision of industrial sites at more competitive rates for SMEs. During the Ninth Plan, a total of RM927.5 million will be provided as soft loans to state economic development corporations and regional development authorities to develop industrial sites and special SME parks, including agriculture and *halal* centres. In addition, an allocation of RM833 million will be provided to build business premises and provide office space at strategic locations.

4.73 The development of *rural industries* will continue to be an important vehicle towards increasing the income and living standards of the rural population. The focus will be on the provision of a more broad-based programme with greater emphasis on higher employment creation and better utilisation of existing and new infrastructure. Efforts will be undertaken to further improve provision of basic infrastructure and amenities. Measures will also be directed at providing more integrated development programmes for potential entrepreneurs that will include marketing and distribution as well as upgrading business management capabilities.

Promoting Cross Border Investment

4.74 With increasing globalisation and regionalisation, more Malaysian entrepreneurs are investing overseas in countries such as China, India, the Middle East and a number of African countries as well as ASEAN countries. Net flow of Malaysian direct investment abroad increased from RM7.7 billion in 2000 to RM11.4 billion in 2005 mainly in plantations, oil and gas, telecommunications, the construction sector as well as MRS. Among the factors driving investments abroad, include increasing domestic competition, maturity of local markets and higher growth opportunities overseas.

4.75 During the Ninth Plan period, more Malaysian companies are expected to avail themselves of the investment opportunities arising from regional agreements and the various bilateral FTAs as well as the global trend in outsourcing. The Government will continue to encourage and support Malaysia's overseas investments, which can result in economic benefits to the country. This will include accessing new and larger markets, maintaining market share and sourcing raw material inputs and components for the growth of domestic industries as well as diversifying into non-traditional businesses. Given the rising trend in cross border investments by Malaysians, it is imperative to have strong institutional back-up to support the country's outward investment drive which will fuel further economic growth. In this regard, the existing Cross Border Investment Division in MIDA will be expanded to spearhead the promotion and coordination of cross border investments in manufacturing, and MRS.

Skilled Human Resource Development

4.76 During the Plan period, employment in the manufacturing sector is targeted to grow at an average rate of 2.8 per cent per annum, as shown in *Table 4-5*. Labour productivity as measured by value added per employee is expected to increase at an average of 3.8 per cent per annum largely due to the wider applications of knowledge-intensive and labour saving technologies as well as quality improvement programmes. The employment in the resource-based industries is expected to grow at an average rate of 3.7 per cent per annum, creating 279,700 new jobs. These include employment opportunities created in the chemicals, food processing as well as rubber products industries. The employment creation in the food processing industry will be largely due to the new emphasis on agriculture and agro-based industries as well as spin-off companies expected to be generated by agro-biotechnology. The rubber processing and products industries, which is expected to sustain its position

TABLE 4-5

EMPLOYMENT IN THE MANUFACTURING SECTOR BY INDUSTRY, 2000-2010

Industry	*Number ('000 Persons)*			*% of Total*			*Average Annual Growth Rate (%)*	
	2000	*2005*	*2010*	*2000*	*2005*	*2010*	*8MP*	*9MP*
Resource-Based	**1,186.6**	**1,423.7**	**1,703.4**	***46.2***	***45.4***	***47.3***	***3.7***	***3.7***
Food Processing, Beverages & Tobacco	237.7	298.9	346.5	*9.3*	*9.5*	*9.6*	*4.7*	*3.0*
Wood Products including Furniture	352.7	373.8	405.8	13.7	*11.9*	*11.3*	*1.2*	*1.7*
Paper & Paper Products, Printing & Publishing	121.6	137.7	156.3	*4.7*	*4.4*	*4.3*	*2.5*	*2.6*
Chemicals, Fertilizers, Plastics & Petroleum Products	238.1	327.0	477.6	*9.3*	*10.4*	*13.3*	*6.5*	*7.9*
Rubber Processing & Products	132.0	171.5	201.6	*5.1*	*5.5*	*5.6*	*5.4*	*3.3*
Non-Metallic Mineral Products	104.5	114.9	115.6	*4.1*	*3.7*	*3.2*	*1.9*	*0.1*
Non-Resource-Based	**1,319.4**	**1,628.3**	**1,798.3**	***51.4***	***52.0***	***50.1***	***4.3***	***2.0***
Textiles & Textile Products	215.8	214.8	192.3	*8.4*	*6.9*	*5.3*	*-0.1*	*-2.2*
Basic Metal & Metal Products	193.8	282.8	340.0	*7.6*	*9.0*	*9.5*	*7.9*	*3.8*
Machinery & Equipment	161.4	162.6	178.1	*6.3*	*5.2*	*5.0*	*0.1*	*1.8*
Electrical & Electronic Products	647.1	840.8	943.6	*25.2*	*26.8*	*26.3*	*5.4*	*2.3*
Transport Equipment	101.3	127.4	144.3	*3.9*	*4.1*	*4.0*	*4.7*	*2.5*
Others	**61.6**	**80.0**	**93.0**	***2.4***	***2.6***	***2.6***	***5.4***	***3.0***
TOTAL	**2,565.8**	**3,132.1**	**3,594.7**	***100.0***	***100.0***	***100.0***	***4.1***	***2.8***

Source: Economic Planning Unit

as a global market leader in latex products, coupled with the increase in market share in industrial rubber goods, is expected to register an average rate of employment at 3.3 per cent per annum.

4.77 The employment in the non-resource-based industries is projected to grow at an average rate of 2.0 per cent per annum, creating 170,000 new jobs. The non-resource-based industries that are expected to register net employment creation are the basic metal and metal products, transport equipment, E&E products as well as the M&E industries. There is anticipated to be an increasing demand for production engineers, mould and die engineers and metallurgists as well as skilled technical human resource in robotics and sensor technologies, advanced materials, nanotechnology and mechatronics.

4.78 Entry into new and emerging industrialised areas will require increased upgrading of current skill sets and technical expertise. Quality training will be emphasised at the various institutes of learning and skills development centres to ensure that knowledge, skills and expertise remain relevant to meet market requirements and to face the increasingly competitive environment. Among others, the human resource development programme on science and technology will be targeted towards developing a core group of research scientists and engineers to meet the requirements for high-end industrial development, particularly in key technology areas.

IV. INSTITUTIONAL SUPPORT AND ALLOCATION

4.79 In terms of institutional support for the development of the industrial sector, MITI will continue to be the lead agency driving the expansion of manufacturing activities and related services. These efforts will be complemented by other key ministries and agencies, including the Ministry of Entrepreneur and Cooperative Development, Ministry of Science, Technology and Innovation, MIDA, MATRADE and SMIDEC. These various agencies will provide the lead for specific programmes such as intensifying Bumiputera participation in commerce and industry, accelerating development of new biotechnology and ICT industries, coordinating and promoting investment and marketing activities as well as developing innovation-driven SMEs.

4.80 The development allocation to support MRS during the Ninth Plan is as shown in *Table 4-6*. The focus will be on accelerating industrial technology development, upgrading industrial infrastructure and promoting advanced skills

TABLE 4-6

DEVELOPMENT EXPENDITURE AND ALLOCATION FOR MANUFACTURING AND RELATED SERVICES, 2001-2010
(RM million)

Programme	*8MP Expenditure*	*9MP Allocation*
Development of Industrial Infrastructure*	476.2	2,705.8
SME Development	1,561.6	2,160.2
Investment Funds	85.6	1,590.0
Training and Consultancy Services	534.3	1,332.0
Total	**2,657.7**	**7,788.0**

Source: Economic Planning Unit

Note : * Including industrial estates, SME parks, infrastructure upgrading and maintenance.

development. Support programmes to strengthen SMEs in particular, will include technical training and apprenticeship, marketing and promotion as well as the provision of outreach services such as business development and consultancy.

V. CONCLUSION

4.81 The Eighth Plan laid a firm foundation for the manufacturing sector to contribute further to high value added and knowledge-content industries and promote economic growth. In order to foster the on-going transformation of the manufacturing sector more vigorously and sustain its competitiveness, the Ninth Plan will provide for a more vibrant enabling environment for FDI and domestic investment to move the sector up along the entire value chain. The challenge will be to reinforce established, as well as develop new and emerging industrial clusters to generate more investment, income and job opportunities. For the future expansion and deepening of manufacturing and related services, the Government will continue to assist the private sector by providing a range of support services, including customised incentives and funding. This will be with a view to building up R&D, technical and managerial core competencies and development of IPs for the expansion of high-value products and brands with export potential. A principal thrust in the industrialisation programme will be the development of a competitive, innovative and technologically strong SME sector. Of equal importance will be for domestic firms to work within global and regional structures in order to develop economic integration and strategic partnerships with international businesses as well as sustain growth and competitiveness of the industrial sector.