Co-funded by

MALAYSIA'S TRANSPORT & INFRASTRUCTURE SECTOR 2016

MARKET STUDY WITH FOCUS ON POTENTIAL FOR EU HIGH-TECH SOLUTION PROVIDERS

Market Report 2016

Implemented By

EU-Malaysia Chamber of Commerce and Industry

SEBSEAM-M
Support for European Business in South East Asia Markets
Malaysia Component

Publisher:
EU-Malaysia Chamber of Commerce and Industry (EUMCCI)
Suite 10.01, Level 10, Menara Atlan,
161B Jalan Ampang,
50450 Kuala Lumpu
Malaysia

Telephone : +603-2162 6298
Fax : +603-2162 6198
E-mail : eumcci@eumcci.com
www.eumcci.com

Author:
Malaysian-German Chamber of Commerce and Industry (MGCC)
www.malaysia.ahk.de

Status:
May 2016

Executive Summary

This study provides insights into the transport and infrastructure sector in Malaysia and identifies potentials and challenges of European high-technology service providers in the market and outlines the current situation and latest development in the transport and infrastructure sector. Furthermore, it includes government strategies and initiatives, detailed descriptions of the role of public and private sectors, the legal framework, as well as present, ongoing and future projects. The applied secondary research to collect data and information has been extended with extensive primary research through interviews with several government agencies and industry players to provide further insights into the sector.

Malaysia is one of the most globalized and urbanized developing countries. In view of the increasing population in urban areas (urbanization), the government is leaning towards the smart city concept. In order to realize its smart city vision, particularly in the Greater Kuala Lumpur and Klang Valley region, the Malaysian government is taking positive steps to ensure a high success in the delivery of sustainable cities in its economy. This includes a strong focus on the development and enhancement of its transport and infrastructure sector.

Thereby, the transport infrastructure is a key driver of economic growth and competitiveness; it's the backbone to any effective smart city strategy. In Malaysia, urban mobility remains one of the biggest challenges confronting the government. In fact, despite the rapid urbanization and town developments, the transport and infrastructure sector has not always been given the necessary priority. With urbanization in Malaysia expected to reach 70 percent by 2020, there is a need to enable an efficient and smooth flow of people, which in turn also enables growth of new urban areas through increased connectivity.

Today, an increased sophistication of transportation networks and services can be recognized. This development enhances connectivity within urban centers in the country via the Light Rail Transit, Monorail, Keretapi Tanah Melayu rail services and stage buses. Moreover, upcoming and highly anticipated transport projects like the LRT extensions, the Mass Rail Transit, and the Bus Rapid Transit will bring the Malaysian transport infrastructure to even greater heights. Additionally, large construction corporates are also becoming active in overseas markets and operations, opening more opportunities for collaborations with European companies in the sector. With the numerous initiatives by the government, the transport infrastructure sector is expected to continue growth, allowing European companies to further capitalize on the market opportunity as well as strengthen their presence.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ASEAN	Association of South-East Asian Nations
NKEAs	National Key Economic Areas
USD	United States Dollar
RM	Ringgit Malaysia
GST	Goods and Services Tax
GDP	Gross Domestic Product
EU	European Union
FTA	Free Trade Agreement
PCA	Partnership and Cooperation Agreement
FDI	Foreign Direct Investment
EUR	Euro
10MP: 2011-2015	Tenth Malaysia Plan
KLIA2	Kuala Lumpur International Airport 2
11MP: 2016-2020	Eleventh Malaysia Plan
MRT	Mass Rapid Transit
ICT	Information and Communication Technology
GKL / KV	Greater Kuala Lumpur / Klang Valley
IDR	Iskandar Development Region
IRDA	Iskandar Regional Development Authority
FELDA	Federal Land Development Authority
ETP	Economic Transformation Programme
LRT	Light Rail Transit
KTM	Keretapi Tanah Melayu
BRT	Bus Rapid Transit
KTMB	Keretapi Tanah Melayu Berhad
SPAD	Suruhanjaya Pengangkutan Awam Darat (English: Land Public Transport Commission)
NKVE	North Klang Valley Expressway
HSR	High Speed Rail
HNDP	Highway National Development Plan
MOT	Ministry of Transport
PCS	Port Community System
DCA	Department of Civil Aviation
RAS	Rural Air Services
ATM	Air Traffic Management
NLPTMP	National Land Public Transport Master Plan
KVMRT	Klang Valley Mass Rapid Transit
SBST	Stage Bus Services Transformation Programme

TOD	Transit Oriented Development
UPT	Urban Public Transport
NKRA	National Key Results Area
GTP	Government Transformation Programme
BET	Bus Expressway Transit
Prasarana	Prasarana Malaysia Berhad
MRT Corp	MRT Corporation Sendirian Berhad
JV	Joint Venture
PDP	Project Delivery Partner
PPP	Public-Private Partnership
3PU	Public-Private Partnership Unit (Malay: Unit Kerjasama Awam Swasta, UKAS)
KPIs	Key Performance Indexes
BOT	Build, Operate and Transfer
LBU	Lebuhraya Borneo Utara Sendirian Berhad
BHP	Borneo Highway PDP Sendirian Berhad
LSDS	Lump Sum-Drawing and Specification
LSBQ	LS-Firms Bill of Quantities
ABQ	Approximate BQ's
D&B	Design & Built
PFI	Private Finance Initiative
JOC	Job Ordering Contracting
DASH	Damansara-Shah Alam Elevated Highway
SUKE	Sungai Besi-Ulu Klang Elevated Expressway
MCMC	Malaysian Communications and Multimedia Commission
RBC	Rural Business Challenge
EPP	Entry Point Projects
MoTAC	Ministry of Tourism and Culture Malaysia
RCI	Royal Caribbean International
MoU	Memorandum of Understanding
MOW	Ministry of Works
PWD	Public Works Department
LPTA	Land Public Transport Act
LPTC	Land Public Transport Commission
FELCRA	Federal Land Consolidation Authority
CRRC	China Railway Rolling Stock Corporation
MOF	Ministry of Finance
GBI	Green Building Index
GTFS	Green Technology Financing Scheme
KeTTHa	Ministry of Energy, Water and Green Technology
BIM	Building Information Modelling
CIDB	Construction Industry Development Board
CIMP: 2016-2020	Construction Industry Master Plan 2016-2020

Malaysia as the

GATEWAY TO ASEAN

01

1. Malaysia as the Gateway to ASEAN

Malaysia is centrally located within the Association of South-East Asian Nations (ASEAN) and consists of two regions separated by the South China Sea. These are Peninsular Malaysia and East Malaysia (consisting of the states of Sabah and Sarawak on the island of Borneo). It has a total land mass of 328,657 square kilometers (126,895 square miles).[1] Malaysia is a federation of 13 states and three federal territories. The capital city is Kuala Lumpur, whereas Putrajaya is the federal administrative center of Malaysia. The official language of Malaysia is Bahasa Malaysia, but English as well as Chinese are also widely spoken.

Figure 1: Map of Malaysia[1]

As of April 2016, the country recorded a total population of 31,270,000 persons.[3] Malaysia is a multi-ethnic, multicultural and multilingual society. Ethnic Malays make up the majority of the population at 57.1%, followed by Chinese at 24.6%, Indian at 7.3% and other local ethnicities at 11%. Hence the country is reflected by a very colorful composition in terms of language, religions and cultural practices. The Malaysian constitution guarantees freedom of religion, although Islam is the largest and official religion. Approximately 61.3% of the population practice Islam, 19.8% Buddhism, 9.2% Christianity, 6.3% Hinduism, and 1.7% practice Confucianism and other traditional religions.[4]

In the 1970's an imbalance of these ethnic groups in terms of share of the national economy was realized, with the minority "ethnic Chinese" holding the clear majority of the business in the country. Hence a so- called "Bumiputera Policy" was introduced. The objective of this policy is to improve the economic situation of the native Malay (Bumiputera) and allow the Malays to reach a stronger share of the economy. Meanwhile in 2011, 23.5% of the economy is held by Malays.[5]

1 World by Map (n.d.)
2 Nationalisme (n.d.)
3 World-o-meters (n.d.)
4 Department of Statistics Malaysia (n.d.)
5 Malaysia Human Development Report (n.d.)

Malaysia, a former British colony, gained its independence in 1957. Since Independence, Malaysia has adopted the political system of a parliamentary democracy with a constitutional monarch, whose position is rotated every five years between each of the nine hereditary state rulers.

Malaysia is also a founding member of ASEAN and the Organization of Islamic Cooperation. It is also a member of the Commonwealth of Nations. Further, the country participates in other international organizations such as the United Nations, the Asia-Pacific Economic Cooperation, the Developing 8 Countries, and the Non-Aligned Movement. Previously, the country has chaired ASEAN, the Organization of Islamic Cooperation as well as the Non-Aligned Movement. In 2015 Malaysia led the ASEAN's ten member countries as the Chairman.

1.1. Economical Overview

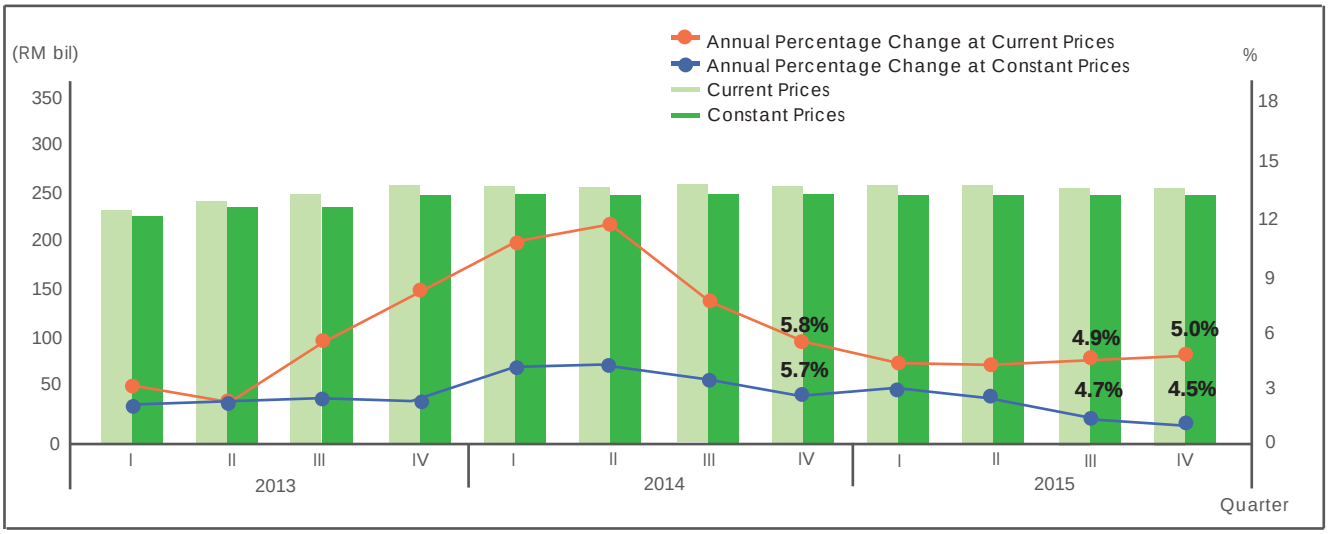
Malaysia is a dynamic country which is constantly evolving. Being a middle-income country, Malaysia has transformed itself since the 1970s from a producer of raw materials into an emerging multi-sector economy spurred on by high technology, knowledge-based, capital-intensive and by nature export-driven industries. Malaysia's GDP ranked at 27th out of 188 economies in 2015.[6] Strategically located in the heart of South-East Asia, Malaysia offers a cost-competitive location for investors intending to set up offshore operations in order to manufacture advanced technological products for both regional and international markets.

In 2011, the Malaysian Government launched the Economic Transformation Programme which is managed by the Performance Management & Delivery Unit under the patronage of the Prime Minister.[7] The Economic Transformation Programme identifies National Key Economic Areas (NKEAs) which are drivers of economic activities that have the potential to materially contribute to the growth of Malaysia. Its objective – also known as "Vision 2020" – is to transform Malaysia into a "high income country" by year 2020, and raise per capita income to at least USD 15,000 (2014: USD 11,120, Source: Worldbank.org), meeting the World Bank's Threshold for a high-income nation.[8]

In 2015, the Malaysian economy continued to perform well and the authorities have taken advantage of favorable conditions provided by the growing economy and full employment to implement key fiscal reforms. Growth accelerated as the recovery of exports and continued strong private demand offset mild headwinds from lower public spending. Private investment continued to be fueled by accommodative financial conditions and the catalytic effects of long term public investment programs. Additionally, strong employment and wage growth supported private consumption. The removal of fuel subsidies pushed inflation above its historical average, but without any signs of more generalized inflationary pressures, despite a positive output gap.

6 World Bank (2016)
7 Economic Transformation Programme (n.d.)
8 Sanusi, N., & Ghazali, N. (n.d.).

Figure 2: Malaysia's GDP Growth Rate[9]



Deposit growth has slowed to the single digits and domestic liquidity conditions are beginning to tighten. In subsequence to the international oil price decline in 2015, the currency of Malaysia, called Ringgit (RM), depreciated by about 18.6% against the USD.[10] However, since then the Malaysian Ringgit has shown a very stable path, with a single digit appreciation.

The Malaysian economy expanded by 4.5 percent during the last quarter of 2015 (Q3 2015: 4.7%). Growth was supported by both domestic and export-oriented activities, despite a challenging external environment. On the supply side, all sectors posted positive growth. The services sector remained the key driver of growth, expanding by 5.0 percent in the fourth quarter (Q3 2015: 4.4%) supported mainly by wholesale and retail trade, information and communication as well as business service activities. Malaysia's manufacturing sector increased further to 5.0 percent (Q3 2015: 4.8%). As the key driver in Manufacturing, Electrical, Electronic & Optical products posted a sturdy growth at 10.5 per cent reflecting a higher momentum in consumer electronics and medical equipment products. The construction sector grew 7.4 per cent (Q3 2015: 9.9%). Civil Engineering posted an impressive growth of 20.4 per cent which was mainly geared by oil & gas and transportation related projects.[11]

Further, the private consumption remained the key driver of growth, expanding by 4.9 per cent (Q3 2015: 4.1%) caused by the better growth in consumption of transportation, food & beverages and communication. The growth of Malaysia's investments is strongly driven by private investment, which increased by 5.0 percent in the last quarter 2015 (Q3 2015: 7.0 %). Meanwhile, investments from the public sector slipped to a marginal growth of 0.4 percent.[12]

9 Department of Statistics, Malaysia (2016)
10 Bank Negara Malaysia (n.d.)
11 Department of Statistics, Malaysia (2016)
12 Ibid.

According to the 2015/2016 Economic Report, the national economy is expected to grow 4.0 to 5.0 percent this year, driven by domestic demand. Private sector spending will remain a significant contributor as it is expected to be the main component of domestic demand with an expected growth rate of 6.4 percent in 2016. Moreover, despite the depreciation of the Ringgit, inflation is expected to remain low as a result of the slowing drop in global crude oil prices and the wearing down of the effects of the Goods and Service Tax (GST) implemented in the beginning of 2015.[13] Other institutions as the World Bank forecast that the country's gross domestic product will even grow by about 5.0 in 2016 and 5.1 percent in 2017.[14]

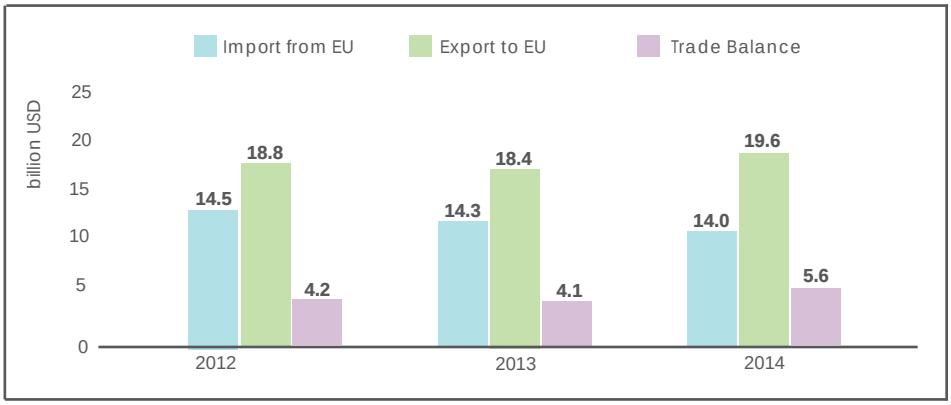
1.2. EU-Malaysia Trade Relations

In accordance with the Delegation of the EU to Malaysia, cooperation in trade and economic issues have been the driving force for closer ties between the EU and Malaysia. In October 2010, Malaysian Prime Minister Najib Razak and the EU leaders launched two major EU-Malaysia bilateral initiatives, namely the negotiations for the Free Trade Agreement (FTA) and for the Partnership and Cooperation Agreement (PCA). The two initiatives are respectively aimed at boosting bilateral trade and investment and at creating a new strategic dimension for the EU-Malaysia political dialogue and economic cooperation. Both negotiations are currently in progress.

The EU is Malaysia's third largest trading partner and accounts for about 10% of Malaysia's total external trade, both in terms of import and export destination and a very important source of Foreign Direct Investment into Malaysia.[15] In contrast, the country is the EU's third largest trading partner in ASEAN after Singapore and Vietnam and the 22nd largest trading partner of the EU worldwide.

As the ASEAN countries continue on the path of regional integration, the strategic position of Malaysia is becoming increasingly more attractive for trading partners such as the EU. This is also confirmed by the Ease of Doing Business Report 2016 of the IMF, in which Malaysia is identified as the 23th best country among 190 countries worldwide.[16] Within the Asia Pacific Region, Malaysia even is the 4th, directly following high developed countries like Singapore, Hong Kong, and Taiwan.

Figure 3: Trade in Goods Malaysia - EU[17]



13 Malaysia Kini (2015, October 23)
14 World Bank (2015)
15 MATRADE (n.d.)
16 World Bank (n.d.)
17 European Commission Directorate-General for Trade (n.d.)

1.3. Economical Key Facts: EU-ASEAN

The EU and ASEAN enjoy a strong trade relationship. ASEAN as a whole represents the EU's third largest trading partner outside Europe with more than EUR 245 billion of trade in goods and services in 2013. The EU is ASEAN's second largest trading partner worldwide.[17]

The EU remains the biggest investor in ASEAN. It is the largest provider of Foreign Direct Investment (FDI) to ASEAN, accounting for 22% of total FDI inflow.[18] The EU's main exports to ASEAN are chemical products and machinery and transport equipment. The main imports from ASEAN to the EU are machinery and transport equipment, agricultural products as well as textiles and clothing. The largest part of EU FDI stock in ASEAN is concentrated in Singapore, Malaysia, Thailand, Indonesia and the Philippines.

17 EU-ASEAN Relations - EUMCCI. (n.d.)
18 Ibid.

GENERAL INTRODUCTION

02

2. General Introduction

Investments in infrastructure provide the foundation for not only long-term economic growth but also improve the life of the citizens. Over the years, Malaysia has significantly invested in infrastructure. Today, a large population of Malaysians have access to essential amenities and services such as clean water, electricity, communications and transport. Extensive developments in both, transport and infrastructure sectors in Malaysia – including logistics, ports, airports, roads, rail, communication technology, water services and electricity supply - have strengthened and established physical and virtual connectivity within the country. This in turn allows development to flow and extend to all areas and regions, raising the standards of living and productivity, nationwide.

In its aim to become an advanced economy and inclusive nation by 2020, Malaysia will not only have to focus on further expanding the physical reach of transport and infrastructure networks to all communities, but to also improve the efficiency, productivity, and affordability of these services, as well as enhance user experience. The government is also leaning towards the development of sustainable, green and smart technology in this sector. In order to achieve this, the government intends to address issues of streamlining licenses and regulations, and strengthen institutional frameworks to improve integrated planning and regulatory oversight of the transport and infrastructure industry

The previous **Tenth Malaysia Plan (10MP: 2011-2015)** has proved the Malaysian government making substantial investments in transport and infrastructure sectors. Reportedly, the road network in Malaysia grew by 68 percent between 2010 and 2015, connecting more regions and encompassing more communities into Malaysia's growth. Ports cargo and container volume grew by 23 percent since 2010, with Port of Tanjung Pelepas and Port Klang, being listed in the World's Top 20 Container Ports. Furthermore, with the new runway and terminal opened in Kuala Lumpur International Airport 2 (KLIA2), the number of passengers grew by 46 percent between 2010 and 2014.

As Malaysia revealed its **Eleventh Malaysia Plan (11MP: 2016-2020)**, transport and infrastructure sectors are set to continue to remain as important drivers of growth through new investments in the sectors that would boost regional development. Expansion of transportation networks and construction of new infrastructures are expected to create new corridors of economic activity nationwide. Improved integration of the different transport modes outlined in the 11MP: 2016-2020, will create consistent and uninterrupted connectivity for people and goods. In order to achieve this, the government and the private sector are said to work together in developing integrated logistics, which is coupled with an efficient trade facilitation, aiming to also further increase Malaysia's trade.[19]

One of the significant categories in the development of Malaysian construction industry is large infrastructure project, which has been recognized as a high complexity project because of high construction risks, high costs of involvement, highly technical requirements as well as involving diverse of resources. Subsequently, in the transport sector, the development of large infrastructure such as highways, railways, Mass Rapid Transit (MRT) and airport requires large investment of both, public and private sector. There are several challenges to be determined prior to the commencement of a large infrastructure project, and to date, in Malaysia, a comprehensive assessment of key success criteria for large infrastructure project is still not systematically defined and needs further research.

19 Economic Planning Unit, Malaysia (n.d.)

Two motives have shaped the scale and pattern of infrastructure development strategies formulated by the Malaysian government. The first is the recognition that infrastructure is vital for the economic development of the country. In this regard the objective of the Malaysian government is to expand infrastructure facilities to keep abreast of the growing demand for infrastructure arising from the growth and transformation of the economy. Ensuring minimal infrastructure shortages is thus a paramount aim of the government. However, meeting the growing demand for infrastructure from modernized sectors of the economy, including the external sector, is not the only objective driving the Malaysian government's infrastructure policy. A second aim is to develop infrastructure to serve socio-economic ends. Here, the focus is on providing infrastructure to promote the development of less developed regions of the country, including rural areas. Improving the accessibility of these regions is intended to bring about a more balanced development of the country and redress economic disparity.

2.1. Smart Cities Development

With over half of the world's population living in cities and still growing, more governments and urban planners are leaning towards the smart city concept. Smart cities rely on the widespread and innovative use of information and communication technologies (ICT) to plan and share resources for economic, environment and social developments towards better quality and sustainable living. Malaysia is also progressing in the development of its smart cities such as the Greater Kuala Lumpur and Klang Valley region, as well as the Iskandar Malaysia. In order to realize its smart city vision, particularly in the Greater Kuala Lumpur and Klang Valley region, the Malaysian government is taking positive steps focusing on the development and enhancement of its transport and infrastructure sector.

Table 1: List of Cities and Populations in Malaysia, 2010[20]

City	Population
Kuala Lumpur	1,475,337
Johor Bahru	916,409
Ipoh	704,572
Shah Alam	671,282
Petaling Jaya	638,516
Kuching	617,887
Kota Kinabalu	462,963
Kuala Terengganu	343,284
Malacca City	331,790
Alor Setar	295,624
Miri	280,518
Georgetown	227,972

20 Department of Statistics Malaysia (2010)

2.1.1. The Greater Kuala Lumpur and Klang Valley

The Greater Kuala Lumpur/ Klang Valley (GKL/KV) region is the beating heart of economic growth in Malaysia. The region includes the city of Kuala Lumpur itself, and nine other municipalities – Ampang Jaya, Kajang, Klang, Petaling Jaya, Putrajaya, Selayang, Sepang, Shah Alam, and Subang Jaya. To date, the population of the GKL/KV region is estimated to be 7.2 million[21]- it hosts a substantial number of population compared to other regions in Malaysia. Further, about 40 percent of the nation's GDP can be related to this area. Malaysia is currently in the stage of shifting from an emerging market to a developed market, and smart solutions are seen as the key towards growth. This developed market-goal is supposed to be reached by 2020, and outside resources are essential to turn the GKL/KV Area into a smart environment. The Malaysian government is proactive and ready to invest in smart initiatives that will push the region forward.

As the fastest growing region in Malaysia as well as the economic center of the country, the GKL/KV area is currently in the midst of a transition from an upper middle income to a high income economy. In order to support the annual growth, improvements and advancements in the communication, energy as well as transport infrastructure are essential. Furthermore, although Malaysia has developed many green policies in recent years, the interpretation and implementation of these policies is rather weak. Combined with a lack of awareness in the private sector and lack of enforcement of the existing legislation by public authorities, such issues become under-addressed. Greater awareness of sustainable building, use of environmentally friendly materials, and government efforts to promote green building are essential for turning the GKL/KV areas into a smarter region.

2.1.2. Iskandar Malaysia

Iskandar Malaysia is Malaysia's economic growth corridor covering a total area of 2,217km2 or 550,000 acres (approximately 12 percent of Johor State). It was formerly known as Iskandar Development Region (IDR). It has a population of 1.4 million, with its development region covering the city of Johor Bahru and the adjoining towns of Pontian, Senai, Pasir Gudang and the construction of a new administrative capital in Iskandar Puteri (previously known as Nusajaya). Five local government authorities have jurisdiction over the covered area, including Majlis Bandaraya Johor Bahru (English: Johor Bahru City Council), Majlis Perbandaran Johor Bahru Tengah (English: Johor Bahru Tengah Municipal Council), Majlis Perbandaran Pasir Gudang (English: Pasir Gudang Municipal Council), Majlis Perbandaran Kulai (English: Kulai Municipal Council), and Majlis Daerah Pontian (English: Pontian District Council). In late 2006, this economic growth corridor in Malaysia's southern Johor was launched as a high impact development to help propel the country into a high-income economy under a 20-year blueprint. The Iskandar Malaysia project is administered by the Iskandar Regional Development Authority (IRDA), a Malaysian Federal Government statutory body tasked with the objective of regulating and driving various stakeholders in both public and private sector towards realizing the vision of developing Iskandar Malaysia into a strong and sustainable metropolis of international standing.[22]

21 World Population Review, Malaysia (2016, June 23)
22 Iskandar Malaysia, FAQ (n.d.)

Iskandar Malaysia is modelled after the Pearl River Delta Economic Zone, envisaged to capitalize on its current synergies with Singapore as it aims to complement each other as an economic hub. The Iskandar region is planned to have a population of 3 million by 2025. The region is also planned to have a workforce of 1.46 million by 2025, from 0.62 million in 2005. The GDP per capita of the region is also expected to rise to USD31,100 in 2025, from USD14,790 in 2005, with an annual change of around 6 percent.[23] In 2006, Iskandar Malaysia was off to a slow start, however the region development has since taken off. The Malaysian government has committed significant investments to improve infrastructure and develop catalytic projects to attract critical mass. The completion of the new highways including the New Coastal Highway, the Eastern Dispersal Link Expressway and the Senai-Pasir Gudang-Desaru Highway has also built investors' confidence. Reportedly, top five countries with highest investments in Iskandar Malaysia were China, Singapore, the US, Japan, and Spain.[24] Today, the region has seen encouraging success with development of better infrastructures.

2.2. Transport & Infrastructure Sector Development

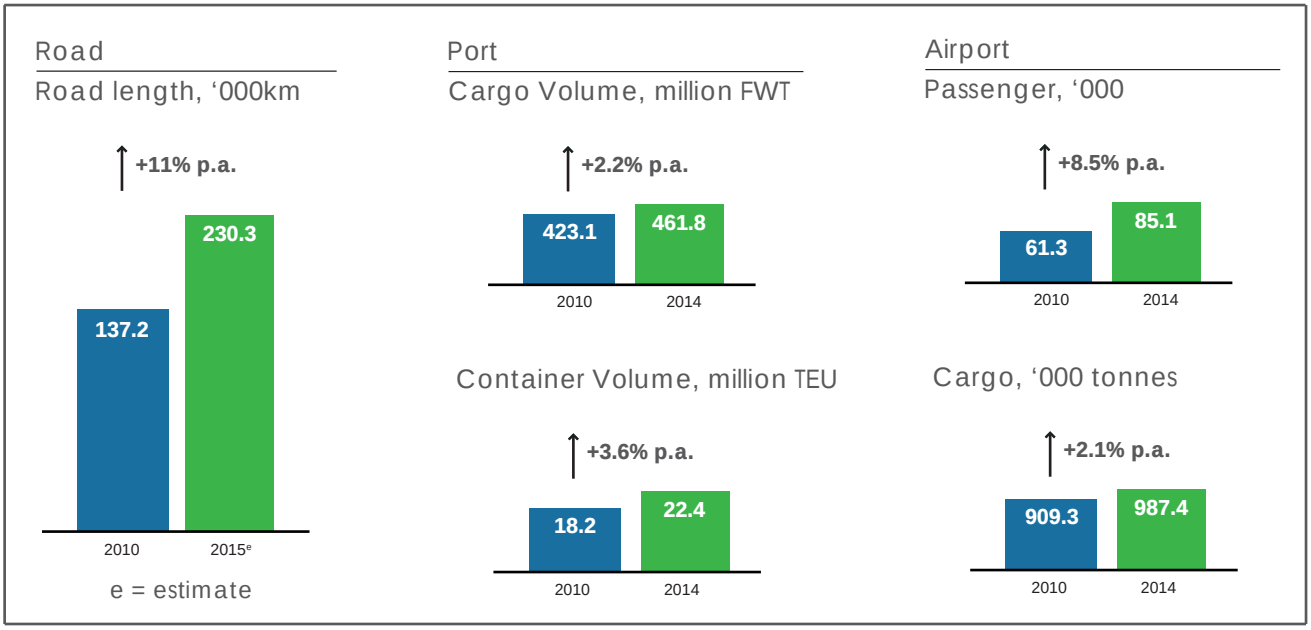
As Malaysia aims to achieve high-income country status by 2020 with the continuous development of its smart cities, the key to reaching the goal is enhancing the transport infrastructure. With heightened competition in air, major road and rail projects under way as well as and a significant boost in port capacity, the Malaysian transport sector will likely face significantly busier times in the coming years. With urbanization in Malaysia expected to reach 70 percent by 2020, there is a need to enable an efficient and smooth flow of people, which in turn also enables growth of new urban areas through increased connectivity.

Previously, in the 10MP: 2010-2015, the Malaysian government emphasized on the development of the transport sector, primarily in road, airport, port and rail, in order to serve the increasing demand of the people as well as the industries. So far, the Malaysians profited from the development in the transport sector. This is further shown in Figure below. Overall, amongst all, road development increased the most by percentage between 2010 and 2015e at 11 percent per annum (in thousand kilometer length). Meanwhile, airports and ports grew at 8.5 percent per annum (in thousand passenger) and 2.2 percent per annum (in million freight weight ton) respectively between 2010 and 2014.[25]

The Economic Transformation Programme (ETP), is said to continue to help maintain the transport infrastructure sector's dominance in infrastructure development. Consequently, a large part of the transport development plans will be focusing on enhancing the usage of public transport, mainly in rapidly growing urban cities where traffic congestion is a major issue. This is in line with the Malaysian government's agenda in their effort to increase public transport modal share in the GKL/KV region to 40 percent, and 20 percent in other capital cities in Malaysia, by 2030. Growth in this sector will further be supported by funding from the Malaysian government via its 11MP:2016-2020, which was announced last year, 2015.[26]

23 Iskandar Regional Development Authority, Malaysia (n.d.)
24 Daily Express (2016, March 1)
25 Economic Planning Unit, Malaysia (n.d.)
26 Ibid.

Figure 4: Highlights of Roads, Ports and Airports Growth in Malaysia, 2010-2014[27]



Meanwhile, the 2016 Budget announced by the Malaysian Prime Minister Najib Razak entails a number of large projects including the MRT lines, rural roads and airport upgrading works. This is in line with the government strategy to keep the economy moving amid worries on global slowdown. Some of the large projects announced in 2016 Budget also include a RM1 billion outlay for a bus network system in Sabah, RM900 million to ease traffic snarls at the major Kuala Lumpur road of Jalan Tun Razak, and RM200 million to improve pot-holed roads in rural Federal Land Development Authority (FELDA) land settlements; as well as multi-year mega projects such as the RM11 billion plan to build the town center for wired-up Cyberjaya city south of Kuala Lumpur, and a RM7 billion airport township, dubbed Aeropolis, around Kuala Lumpur International Airport.[28]

Furthermore, in the transport infrastructure sector, Malaysia is constructing its first Mass Rapid Transit (MRT) network, a planned 3-line mass rapid transit system in the Greater Kuala Lumpur / Klang Valley region. The project represents one of the economic entry point projects identified for the Klang Valley NKEA under the ETP by the Malaysian government. The proposal on the MRT project was announced in June 2010 and was approved in December 2010 by the Malaysian government. The construction of the MRT Line 1 began in July 2011 and is expected to be completed in 2017. The MRT Line 1, from Sungai Buloh to Kajang spans 51km long and covers 31 stations. It is said to be able to transport 20,000 passengers per hour per direction or 400,000 passengers per day. Meanwhile the construction of MRT Line 2 and Line 3 is yet to commence. Kuala Lumpur and its suburbs are currently served by the Light Rail Transit (LRT), monorail and Keretapi Tanah Melayu (KTM) networks; while the MRT network will cover a much larger area within the heavily populated Klang Valley.

27 Economic Planning Unit, Malaysia (n.d.)
28 MRT Corporation (n.d.)

The development of the land public transport plays a catalytic role in accelerating and shaping the economic growth in Malaysia, apart from satisfying a growing demand. This is because, provision of effective public transport services not only has the potential of opening up new growth clusters, but also enhancing the attractiveness of existing clusters, and driving urban revitalization. In addition, increased economic activity built upon an advanced land public transport network may also result in other positive spill-over effects . Given the importance of land public transport in the overall national development agenda, it is important to take stock of advancements in land public transport provisions. Infrastructure development has delivered concrete improvements to passengers, offering high-impact land public transport solutions to mobility requirements.

Table 2: Competitiveness of Malaysia's Transport Infrastructure[29]

	Rank/133 in 2009/2010	Rank/139 in 2010/2011	Rank/ 142 in 2011/2012	Rank/ 144 in 2012/2013	Rank/ 148 in 2013/2014	Rank/ 144 in 2014/2015
Quality of Roads	24	21	18	27	23	19
Quality of Railroad Infrastructure	19	20	18	17	18	12
Quality of Port Infrastructure	19	19	15	21	24	19
Quality of Air Transport Infrastructure	27	29	20	24	20	19
Quality of Overall Infrastructure	**27**	**27**	**23**	**29**	**25**	**20**

Today, it can be observed that there have been increased sophistication of transportation networks and services in Malaysia. This in turn enhances connectivity within urban centers via the LRT, Monorail, KTM rail services and stage buses. There are also increased land public transport linkages between different regions across the country. Furthermore, upcoming and highly anticipated transport projects like the LRT extensions, the MRT, and the Bus Rapid Transit (BRT) will bring the Malaysian land public transport landscape to even greater heights – giving Malaysians greater access to first world public transport infrastructure and services in the future.

29 World Economic Forum (n.d.)

Table 3: Major Upcoming Transport Infrastructure Projects in Malaysia[30]

East Coast Railway Line Upgrade (Gemas to Tumpat) – RM150 Million	• To upgrade the east coast line from Gemas to Mentakab, Jerantut to Sungai Yu and between Gua Musang and Tumpat with a total of 62km • The RM 150 million is to kick-start the rehabilitation project. There will be more allocations on a yearly basis. However, for Keretapi Tanah Melayu Berhad (KTMB) to be an efficient rail operator, the whole east coast line needs to be upgraded as soon as possible to avoid accidents and derailments • The government is spending around RM16 billion to improve the west coast line from Seremban-Gemas and Ipoh-Padang Besar with the electrified double-tracking project • For the east coast line, there are currently no plans to electrify or double-track the stretch
Second MRT Line (Selayang to Putrajaya) – RM23 Billion	• The 56km MRT line 2 is the second biggest infrastructure project • The project is expected to take five years to complete: preparation work, land acquisition and moving utilities
Third MRT Line	• The final circular line is still in the planning stage • Its orbital route around the city center will integrate with the rest of the rail network and alleviate pressure in key areas of the city
LRT 3 Project (Bandar Utama to Shah Alam and Klang) - RM 9 Bilion	• The route, 36km, proposed to Suruhanjaya Pengangkutan Awam Darat (SPAD) by Prasarana will begin at the Bandar Utama MRT station currently in construction and trace the North Klang Valley Expressway (NKVE) to an interchange station with the Kelana Jaya Line in the vicinity of Glenmarie also under construction as part of a line extension • Estimation of one station is around RM 50 million to RM 60 million • It is expected to start construction this year, 2016 and is expected to be completed in 2020
Klang Valley Double Track – RM 1.3 Billion[31]	• Implemented by Keretapi Tanah Melayu Berhad (KTMB), the project will involve infrastructure and system upgrades • Entails the rehabilitation of 42 kilometers of tracks between Rawang and Salak Selatan as well as Sentul and Simpang Batu, which will also include enhancement of 16 stations[32] • The timeline is from 2016 to 2019; and it involves 5 phases[33]: – Phase 1A [Rawang – Simpang Batu] Rawang – Kuang – Sungai Buloh – Kepong Sentral – Kepong – Segambut – Phase 1B [Kuala Lumpur – Simpang Pelabuhan Klang] Kuala Lumpur – KL Sentral

30 Ministry of Transport Malaysia (n.d.)
31 New Straits Times (10 February 2016, February 10)
32 Suruhanjaya Pengangkutan Awam Darat (SPAD) Malaysia (2016)
33 Ibid.

	– Phase 2 [Simpang Batu – Kuala Lumpur] Segambut – Putra – Bank Negara – Kuala Lumpur – Phase 3 [Sentul – Simpang Batu] Sentul – Putra – Segambut – Phase 4 [Simpang Pelabuhan Klang – Salak Selatan] KL Sentral – Mid Valley – Seputeh – Salak Selatan
Kuala Lumpur-Singapore High Speed Rail (HSR)	• A major project which is expected to cost RM43 billion • The rail is likely to be 330km long while the speed of the high speed rail is at 220km per hour • There will be eight stops on the HSR between Kuala Lumpur and Singapore • The timeline of 2020 is expected to be challenging given the time for designing and other processes

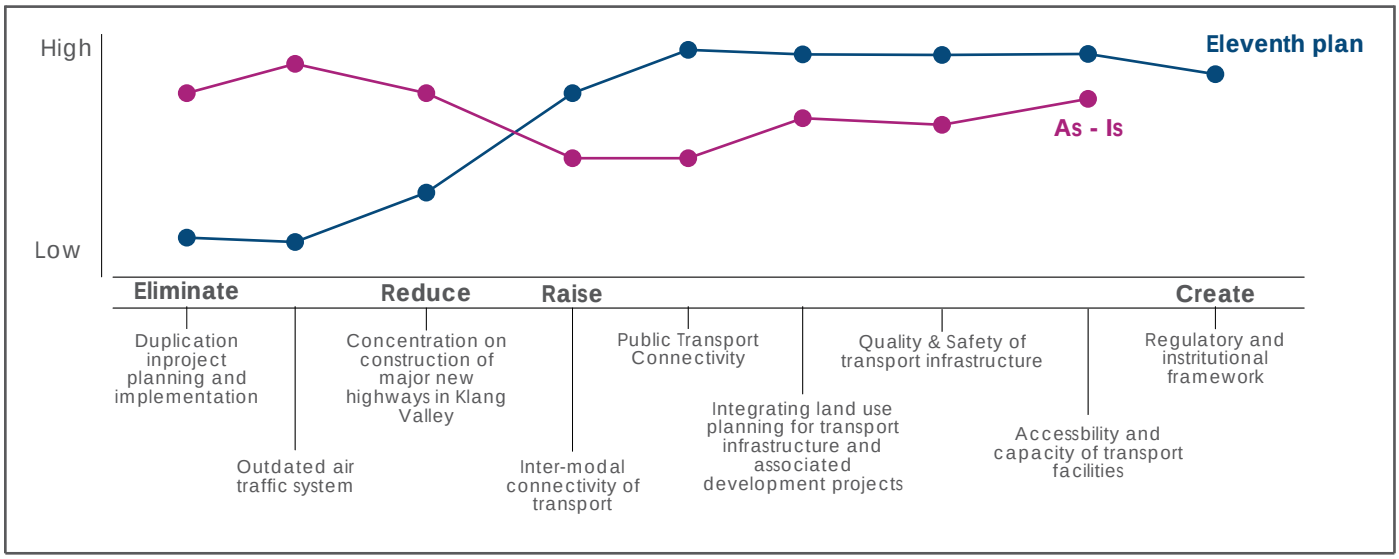
Plans outlined in the 11MP:2016-2020 for Malaysia's transport and infrastructure sector will be further discussed in the next sub-chapter.

2.2.1. Strategy Canvas of the 11th Malaysia Plan

As part of its effort to develop the transport infrastructure, it is outlined in the 11MP:2016-2020, that Malaysia aims to further utilize its existing facilities by focusing on improving the delivery, quality of services as well as the capacity. The figure below shows the strategy canvas for Malaysia's transport infrastructure development.

Sub-chapters 2.2.1.1 to 2.2.1.4 describe plans set out in the 11MP:2016-2020 by different transport sector.

Figure 5: Strategy Canvas for Transport Infrastructure Development [34]



34 Economic Planning Unit (EPU) (n.d.)

2.2.1.1. Road

The 11MP:2016-2020 is set to prioritize regional connectivity for new highways, which will focus more on highway development outside of the Klang Valley region as well as other urban areas. This is expected to extend regional connectivity to new growth areas and further maximize the potential of cities in Malaysia in order to achieve balanced economic development. Through the 11MP:2016-2020 Malaysia will emphasize and prioritize on improving its public transportation services as well as reducing traffic congestion in major cities such as Georgetown, Johor Bahru and Kota Kinabalu. To identify existing roads for upgrading and constructing new alternative routes, the Highway National Development Plan (HNDP) will be utilized. Here, comprehensive needs analysis will be put into practice in road planning in order to assure effective decision-making.

Continued efforts to improve connectivity to rural areas will also be realized during this Plan period via the Blue Ocean approach by fully-utilizing available materials with local labor. Highway projects such as the Pan Borneo Highway is constructed to provide better connectivity for people, goods, and services in the states of Sabah and Sarawak. Meanwhile, the Kota Bharu-Kuala Krai Highway and Lebuh Raya Pantai Timur are expected to expand connectivity in Peninsular Malaysia as well as to promote growth in the east coast region, apart from narrowing the gap between urban and rural development. Furthermore, the West Coast Expressway which is expected to be completed in 2019 will improve access to the west coast of Perak and Selangor.

Malaysia also aims to shift towards preventive maintenance and to improve road safety during the 11MP:2016-2020 period. Malaysia will adopt the life-cycle costing approach in planning, implementation and maintenance of road development. Furthermore it will intensify the utilization of advanced materials and innovative technology in road construction and maintenance, in order to improve the durability of its road infrastructure. Moreover, Malaysia plans to optimize its existing funds to finance road safety enhancement programmes under the Black Spot Mitigation Programme and Road Safety Audit. Through these programmes it hopes to minimize road fatalities by 50 percent by 2020.[35]

2.2.1.2. Port

In the port subsector, Malaysia aims to improve land connectivity, port accessibility and expand capacity. It also plans to strengthen governance while leveraging ICT and technological solutions to support port activities during the Plan period. To achieve this, the road and rail upgrading and integrated planning and development for new linkages will be optimized to further encourage the multimodal transport system. Channel deepening works as well as capacity expansion works will be carried out in order to improve accessibility to ports to cater for mega vessels.

In order to support the growth of ports, the Ministry of Transport (MOT) will integrate land use planning among the stakeholders which will be carried out via periodic engagements with state and local authorities – reserving land bank for future expansion. In the 11MP:2016-2020, all port authorities will also be required to establish their Port Community System (PCS) to allow intelligent and secure information exchange between public and private stakeholders. In addition, during the Plan period, the National Port Policy will be implemented to foster systematic development and growth of ports and jetties by introducing comprehensive strategy and policy measures.[36]

35 Economic Planning Unit (n.d.)
36 Ibid.

Table 4: Capacity Improvements to be Carried Out by Port Operators[37]

City	Population
Port Klang, Selangor	Development of additional container wharf as well as upgrading of wharf at Northport
Bintulu Port, Sarawak	Refurbishment of existing facilities and construction of additional berth for liquefied natural gas, 400-meter general cargo wharf and supply base terminal
Kuantan Port, Pahang	Dredging and berth construction for the Kuantan Deep Sea Terminal
Penang Port, Pulau Pinang	Deepening of the access channel from 11.5 meters to 14.5 meters
PTP, Johor	Deepening of navigational channel and land reclamation for construction of 700-meter container wharf under phase III expansion programme

2.2.1.3. Airport

The 11MP:2016-2020 is set to continue to upgrade the capacity and efficiency of airports and international gateways. This includes establishing the Malaysian Aviation Commission, corporatizing the Department of Civil Aviation (DCA), upgrading system as well as airport infrastructure and strengthening rural air services (RAS).

As an independent regulatory body, the Malaysian Aviation Commission will function as an entity that oversees the national development objectives and manages capacity of operators and competition via licensing and route allocation. Meanwhile, the options on corporatizing the DCA will be assessed by the government in order to assure financial and management independence – as it aims to enhance capacity, quality and competency of its human resource. Additionally, in order to upgrade the system and airport infrastructure, efforts will include the construction of a new Kuala Lumpur Air Traffic Control Centre in replacement of the National Control Centre in Subang, Selangor, upgrading works of the communication, navigation, surveillance and air traffic management (ATM) systems. Moreover improvement works of the Sultan Ismail Petra Airport in Kelantan, which include runway widening and lengthening, taxiway upgrading, terminal expansion, and enhancement of supporting facilities, are entailed. Furthermore, upgrading works on the STOLport such as the Mukah airport in Sarawak and the relocation of Lawas STOLport[38] will further improve RAS and improve connectivity of rural air services.[39]

37 Ministry of Transport, Malaysia (n.d.)
38 Abbreviation: Short Take Off and Landing airport
39 Economic Planning Unit (EPU) (n.d.)

2.2.1.4. Public Transport

By 2030, Malaysia targets to achieve public transport modal share of 40 percent in the GKL/KV area, whereas 20 percent modal share in other capital cities. Therefore, it will emphasize more on providing public transport services that are well-connected, accessible, affordable, convenient, reliable, and safe – so to support the use of public transport. Efforts to improve connectivity and mobility in rural, rural-urban, urban and intercity will be intensified.

Table 5: Main Features and Key Issues of Existing Public Transport[40]

Type	Features	Key Issues
Rail	• In 2014, the Kelana Jaya and Ampang LRT services recorded the highest passenger load with 81,971,322 and 63,270,432 passengers respectively[41] • Masjid Jamek and KL Sentral are the most crowded interchange stations • The KTMB is preferred for longer distance mobility that include locations outside of the GKL/KV area • Of 50 KTMB stations in the region, 12 have less than 250 passengers per day. This reflects the inaccessibility from the surrounding areas as well as the low frequency and slow journey times on KTMB	• Service availability and capacity • Poor integration with bus feeder services • Quality of existing track and signaling • Ticketing integration
Bus	• In the GKL/KV area, an extensive bus network is operated by RapidKL, Metrobus and a number of smaller operators • Existing bus service is concentrated in central KL on the main corridors of movement in GKL/KV area • There is very little penetration of residential areas as in many cases the residential area road connections to major routes are poor in terms of bus service operation • The daily ridership on RapidKL bus services is about 380,000 passengers per day	• Service frequency and travel time • Poor enforcement of existing bus lanes • Bus capacity • Poor (unsatisfactory) bus and bus stop conditions • Driver attitude • System failure or machine breakdown • Number and location of bus stops and interchange stops • Unavailability of bus service information

40 Suruhanjaya Pengangkutan Awam Darat (SPAD)(2011)
41 Ministry of Transport (2015)

	• The average bus speed in the morning peak hours ranges from 9km/h to 15km/h • There are about 4,200 bus stops in the GKL/KV area	
Taxi	• There are over 29,000 budget taxis and 1,500 executive taxis in the GKL/KV area • There are about 531 airport taxis registered in Kuala Lumpur and about 2,044 registered in Selangor • There are about 252 and 785 limousines registered in Kuala Lumpur and Selangor respectively with a further 1,055 and 449 hired cars registered in Kuala Lumpur and Selangor respectively • Budget and executive taxis are permitted to be licensed up to 10 years • Some 52% of the budget fleet are aged between 5 and 8 years old	• Service availability • Safety concerns among passengers • Drivers attitude • Poor (unsatisfactory) taxi conditions • Taxi fee and overcharging

By 2020, it is expected that 75 percent of Malaysia's population will reside in urban areas, prompting the implementation of the National Land Public Transport Master Plan (NLPTMP). Subsequently, new projects will be carried out including: the KVMRT Line 2 project (Sungai Buloh-Serdang-Putrajaya), LRT3 (Bandar Utama-Klang), monorail for Putrajaya and Cyberjaya as well as KL-Klang BRT corridor. On the other hand, in other capital cities, studies will be executed to determine the passenger per hour per direction for each major cities, while concentrating on integrated transport planning. The stage bus services will also be revamped under the Stage Bus Services Transformation (SBST) Programme.

The NLPTMP also outlines ways to enhance intercity connectivity with rail being the foundation to facilitate intercity mobility,apart from improving bus services by restructuring the bus network for more regular and frequent services without abandoning needs in low-demand areas. For the improvement of the connectivity in rural and rural-urban areas, SBST Programme is to be extended to these areas by increasing the frequency and reliability of public transport. On top of that, alternative community-based public transport system will be introduced for those who do not have access to the conventional public transport. Assessments to determine alternative modes of transportation to reduce reliance on water transport in remote areas will also be carried out.

To strengthen agency collaboration in formulating integrated transport policies, and better assess current and future mobility demand, a national transport model will be introduced during the 11MP:2016-2020 period. During this Plan period, Malaysia will also be promoting Transit-Oriented Development (TOD) to optimize the utilization of land and space, generate higher income for public transport operators, as well as attract private investment for commercial and residential purposes.[42]

2.2.2. National Key Results Area for Urban Public Transport

Improving urban public transport (UPT) is one of the seven critical National Key Results Areas (NKRA) under the Government Transformation Programme (GTP). The Urban Public Transport National Key Results Area in the GTP spells out the need for raising the modal share, improving reliability and journey times, enhancing comfort and convenience, as well as improving accessibility and connectivity. Malaysia is ambitious to improve its transport infrastructure and services particularly within GKL/KV area, to bring the city on par with other developed cities. Data collected on this sector continues to show positive growth, suggesting that the government's initiatives are right on track. For instance, ridership numbers for the peak period in the morning grew by 4 percent between 2013 and 2014; to 455,728 public transport riders in 2014 compared to 437,525 in 2013. In addition, customer satisfaction of public transport services is also said to have increased to 86 percent from 71 percent.[43]

The following highlights from NKRA achievement in 2014[44]:

- Public transport AM peak ridership increased to 455,728 due to improvements such as: better integrated terminals, increased capacity of the rail service and reduced headway of public transport services
- A total of 2,407 Park N Ride bays completed in 2014: 558 bays in Shah Alam, 102 bays in Padang Jawa, 1,140 bays in Ampang, and 607 bays in Asia Jaya
- Longest BRT Route in Klang Valley linking Kuala Lumpur to Klang is in the planning stage and has been proposed
- KTM Komuter service improvement: 36 six car-sets have been introduced, 15-minute waiting time reduced, 92 percent load factor increase from 72 percent in 2013, and 97.5 percent time performance increase from 94.6 percent in 2013
- LRT Kelana Jaya Line improvement: 35 four car-sets have been introduced, and the AM peak headway has been reduced to less than 2 minutes
- Two sets of new four car-set monorail trains have started operation end of 2014
- Bus services improvement: 470 new RapidKL buses, 9 Bus Expressway Transit (BET) corridors, 1,544 new / refurbished bus stops, 4 Go-KL bus routes were launched, and Pasar Seni City Bus Terminus (HAB) began operation
- Implementation of the passenger information display (PID) at 58 major bus stops in the Klang Valley region to provide estimated time of bus arrival
- The ridership for Go-KL city bus has increased to 35,000 passengers daily after an additional two lines were introduced (blue and red lines) in May 2014
- New Pasar Seni and Munshi Abdullah City Bus Terminals that help to decongest Kuala Lumpur center business districts

42 Economic Planning Unit (EPU) (n.d.)
43 Jabatan Perdana Menteri (2015)
44 Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD) (n.d.)

2.2.3. National Land Public Transport Master Plan

The Land Public Transport Commission, Malaysia (SPAD) has undertaken its mandate via extensive research, planning and engagement with various stakeholders and government agencies; by introducing an integrated National Land Public Transport Master Plan (NLPTMP) which sets out the vision and direction for public transport in Malaysia. Due to the existence of multiple stakeholders and agencies involved in the federal state and local levels, the public transport sector in Malaysia is rather complex. Therefore there is a need for every party from both, public and private sectors, to implement the same guiding principles to ensure all available resources for the public transport sector are being optimized – placing the NLPTMP on its strategic and defining role.

The NLPTMP was approved by the Cabinet on 16th October 2013. Its main target is to achieve 40 percent of model share for public transport in the urban areas by 2030 as well as to increase public transport connectivity in rural areas. The roles of NLPTMP are as listed below[45]:

- Intended to guide decisions on future land public transport
- The Master plan is driven by a vision and a series of national objectives
- It is based on a review of existing conditions and establishing goals and objectives for the future
- As guide decisions on future land public transport

Table 6: National Objectives for Land Public Transportation[46]

Increase Economic Competitiveness and Growth	• Access to jobs • Access to international links and key employment centers • Reduced journey times • Capacity
Health, Safety and Security	• Personal security • Reduce road accidents • Encourage healthy lifestyles
Improve Access, Connectivity and Integration	• Access to public transport network • Access to facilities • Interchange • Quality of journey • Integration with land use
Efficiency and Affordability	• Reliability • Encourage modal shift to public transport • Costs, value for money and fundability • Feasibility studies • Deliverability

45 Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD) (2012)
46 Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD)(2011)

Equality of Opportunity	• Access to all • Affordable pricing
Environment	• Impact on local environment • Air quality • Impact on climate change

This NLPTMP has been designed primarily for three groups of users[47]:

- Federal agencies
  - *The NLPTMP provides the strategic direction for land public transport development throughout Malaysia. It takes into consideration the need to effectively allocate resources which are critical towards economic growth and competitiveness*
- State and local authorities
  - *The macro policies and plans developed under the NLPTMP will be the basis for the development of the regional NLPTMP and will facilitate land public transport planning and development at the state and local levels*
- General public
  - *This NLPTMP gives a broad overview of the land public transport transformation effort, including some of the initiatives that Malaysians can look forward to in the coming years*

The introduction of the NLPTMP is expected to improve the delivery of public transport network and services in Malaysia through its strategic direction and guiding principles, which can be adopted by all parties as they prepare local implementation plans in the public transport infrastructure sector. On top of that, the plan is meant to provide insight into the policies and the principles of the government in the sector to various interest groups, such as a public transport operators, public transport users, as well as the general public.

Where public transport will undoubtedly have an impact, the NLPTMP will serve as a practical guide for policymakers in areas such as urban, rural and regional development. The plan promises to open a new chapter in the development of Malaysia's land public transport sector.

47 Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD) (2012)

2.3. Rail Sector to Spur Infrastructure Growth

The need for a practical and encompassing public transport motivates the government to invest in the expansion of the railway transportation systems to cater for current and future national development agenda. In Malaysia, railways are mainly made up of narrow 1.00m gauge (~97%), and only a total of 57km of the railway tracks are made up of broad 1.435m gauge. The urban railway network is primarily located in the GKL/KV region, covering the capital city Kuala Lumpur as well as adjoining cities and towns within the state of Selangor. To date, the railway network in Malaysia consists of the monorail line, LRT lines, airport railway links, and commuter railway lines. Meanwhile, a number of large rail infrastructure projects are either underway or in the pipeline. Hence, it is believed that the rail sector will provide a great source of opportunities in the next years.

By 2020, railways are expected to account for approximately 52 percent and 72 percent of total infrastructure and transport infrastructure industry value, respectively – making it the primary driver of growth in not only the transport sector but also infrastructure sector. Furthermore, railway has been forecasted to be the fastest growing transport infrastructure sub-sector in the country, with an estimated average growth of 8.9 percent per annum between 2016 and 2020.[48]

This growth will be primarily driven by a number of large-scale railway infrastructure projects. With the construction to expand the LRT network in GKL/KV region in place, Malaysia is also currently developing its MRT systems and is on its way to bringing the first high speed rail system that connects Kuala Lumpur and Singapore. Further highlighting the long-term prospects on the development of the rail sector are plans for the Malaysia Vision Valley mega projects, announced in 2015, which will see the western part of the state of Negeri Sembilan covering Nilai, Seremban and Port Dickson, and with a proposed area of 108 thousand hectares, being established as another regional economic development initiative. It is said that the Malaysia Vision Valley aims to complement the development in Klang Valley, particularly in Putrajaya and Kuala Lumpur.

Figure 6: Malaysia Transport Infrastructure Value by Sector, 2015^{e}-2025^{f} [49]

48 BMI Research (2016)
49 Ibid.

As the government moves toward easing traffic congestion in the GKL/KV region as well as encouraging increased usage of public transport, most railway development will be centered on the Klang Valley area. Reportedly, development of railways will be stimulated by increased growth in urban population which places further strain on public transport infrastructure. According to the ETP Annual Report 2014, there was an increase in population within the GKL/KV region from 6 million in 2010 to approximately 7 million in 2013. This in turn indicates increased urbanization trend in the country. Despite Malaysia's urbanization level sitting at only 67 percent, which is relatively low compared to other developed countries, the GKL/KV region has in fact scope for further growth.[50]

Furthermore, the ETP is now in its sixth year of implementation since its introduction in 2010, and it is believed that the transport infrastructure sector will continue to be a priority for the Malaysian government. Alongside the ETP, the 11MP:2016-2020 marks a momentous milestone in Malaysia's history. Moreover, with 2020 now just five years away, the 11MP:2016-2020 is the next critical step in the nation's journey to become an advanced nation that is inclusive and sustainable.

It is said that the 11MP:2016-2020 will remain strong in supporting the development of infrastructure aside from providing fresh impetus for an acceleration of transport projects. Despite the government reducing development expenditure by RM4.5 billion to RM5 billion under the recalibrated Budget 2016 due to further tumbling of oil prices, it is believed that the impact is not substantial on large-scale transport infrastructure projects such as MRT, LRT3, Pan-Borneo Highway, and KL-Singapore HSR, as the projects are still proceeding.[51]

2.3.1. Recent Developments in Urban Rail

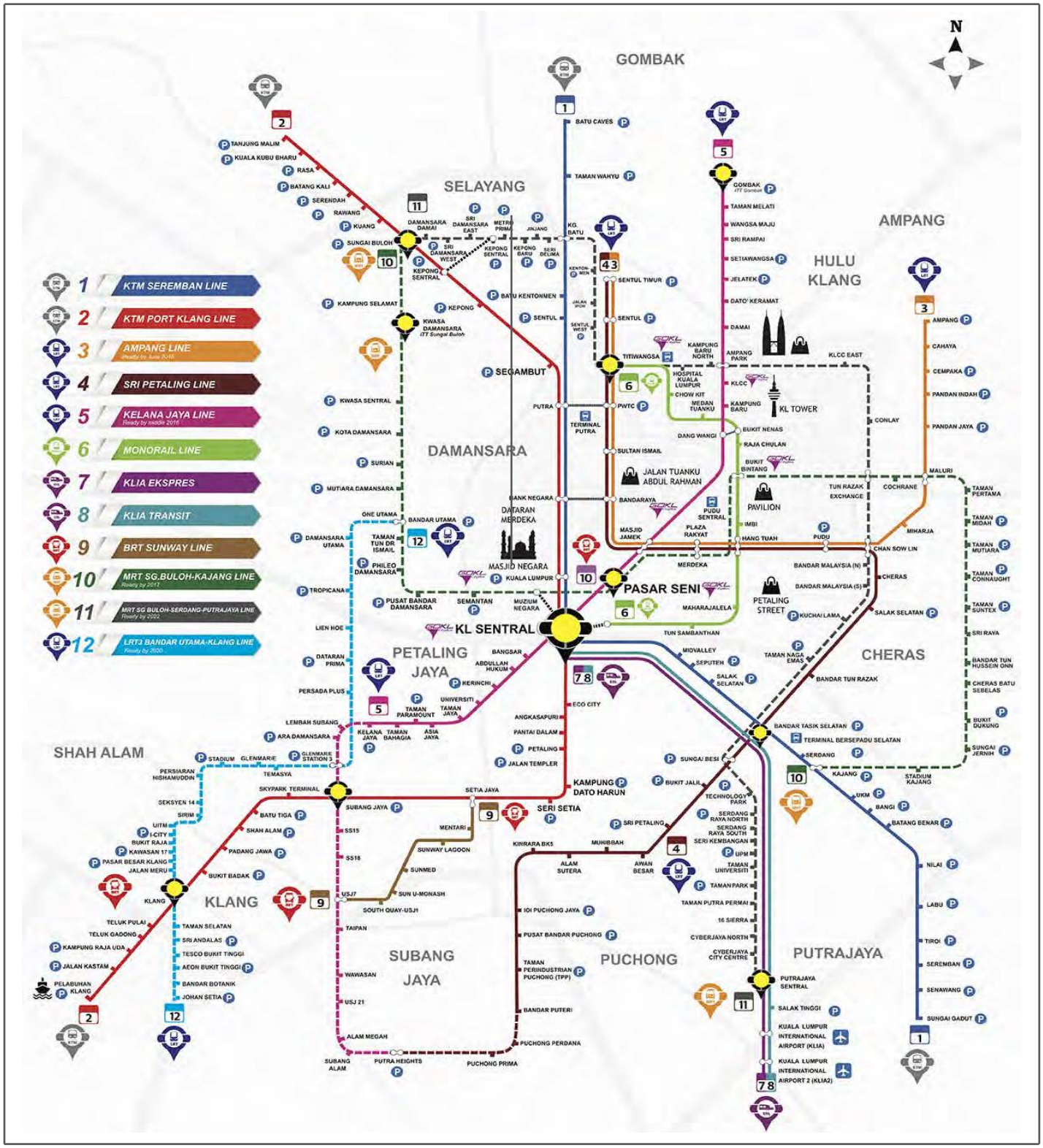
As mentioned previously, it is expected that urban rail developments will be focusing particularly in the GKL/KV region, while rail developments may also emerge in Penang over the coming years. The increasing demand for public transport is being driven largely by urban population growth in the GKL/KV region.

One of the ongoing developments in rail sector is the extension of the LRT network. The LRT Line Extension project is part of the government's nation-building initiatives to enhance and integrate the urban public transportation services. This involves the extension of two LRT lines: Ampang Line and Kelana Jaya Line. The two lines are expected to meet at an integrated station at Putra Heights, located about 25km from Putrajaya.

The Ampang Line extension starts from Sri Petaling Station and passes through Kinrara, Puchong, and ends at Putra Heights. The extension is 18.1km long in total of the original 27km line, with 12 new stations, which will terminate at Putra Heights in the southwest of the city. On 31st October 2015, the urban rail network in GKL/KV witnessed its growing rapid transit system with the opening of 4 new LRT stations extension of the Ampang Line. This is the first of a two-phase extension, stretching 5.5km long. Subsequently, on 31st March 2016, the second phase of the extension began its commercial operations with the opening of 4 more new LRT stations, which are expected to contribute to significant falls in road congestion in Puchong.[52]

50 BMI Research (2016)
51 The Edge Markets(2016)
52 Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD) (2011)

Figure 7: Rail Transport Network of Klang Valley [53]



53 Suruhanjaya Pengangkutan Awam Darat (SPAD) (2016)

The Kelana Jaya line extension is 17.4km long in total of the original 29km line, with 13 new stations. The extension will start from Kelana Jaya station passing through 13 new stations, including Ara Damansara, Subang Jaya and USJ before ending at Putra Heights Integrated Station. It was reported on 14 April 2016, that Prasarana Malaysia Berhad (Prasarana) confirmed in a media release that the Kelana Jaya Line extension will be fully operating on 30th June 2016.[54]

Furthermore, on the LRT3, in many media reports recently, Prasarana announced that for the competitive tendering for the project, they have identified 96 applicants who met the requirements of a weightage-based evaluation criteria. In brief, these applicants would proceed further to tender for the LRT 3 project. As the pre-qualified tenderers have been shortlisted, LRT 3 project owner Prasarana Malaysia Bhd together with the project delivery partner, Malaysian Resources Corp Bhd and George Kent Bhd, will now initiate the tendering process for the LRT 3. Reportedly, the tender period will start from May 2016 onwards.

To build the LRT3 infrastructure that comprises of stations, viaducts as well as park and ride facilities, a total of 44 companies have been shortlisted and have been broken up into two segments. A total of 22 companies have been shortlisted to bid for the large infrastructure jobs that would be awarded on a competitive basis. Another 22 companies have been shortlisted on a restricted tender basis among majority Bumiputera-owned companies. Also, a total of eight companies have been shortlisted for the tunneling portion, which will span across 2 kilometers. The system works have been broken up into four different categories, including the rolling stocks that are mainly dominated by international players. Almost all the familiar large construction players have been shortlisted for the main infrastructure job. These include, Gamuda Bhd, Bina Puri Holdings Bhd, Crest Builder Holdings Bhd, WCT Bhd, IJM Corp Bhd, Naza Engineering, Muhibbah Engineering (M) Bhd, and Sunway Construction Group Bhd, among others.[55]

LRT 3 is a 26 stations light rail transit project stretching from Bandar Utama to Klang. The LRT3 line is expected to serve around two million people in the Klang Valley, transporting around 70,000 passengers daily with an end-to-end journey time of 51 minutes. The first running trials will begin after the project is completed sometime in the first quarter of 2020.

In addition to the LRT development, the Malaysian government has announced its plans for the development of a KVMRT in December 2010, as part of the ETP in its effort to enhance transportation coverage as well as reduce traffic congestion in the region. The project was initially proposed to the government by a private-sector consortium in early 2010. The KVMRT is a proposed three-line mass rapid transit system: MRT Line 1, MRT Line 2 and MRT Line 3; in Klang Valley, stretching 156km (about 40km underground) in length, which will be integrated with other public transport network such as the LRT, monorail, KTM Komuter as well as the intra- and inter-city buses. Reportedly, when operational, the MRT system targets to carry 400,000 of commuters daily. It is estimated that the KVMRT will cost about RM48 billion (including railway tracks and rolling stock). Additionally, the MRT Corporation Sdn Bhd (MRT Corp), an entity wholly-owned by the government, was set up to be the developer and owner of the KVMRT project. MRT Corp has also selected a joint venture (JV) between Gamuda and MMC as the project development partner (PDP) for the KVMRT.[56]

54 MyRapid (2016)
55 The Star Online (2016, May 5)
56 BMI Research (2016)

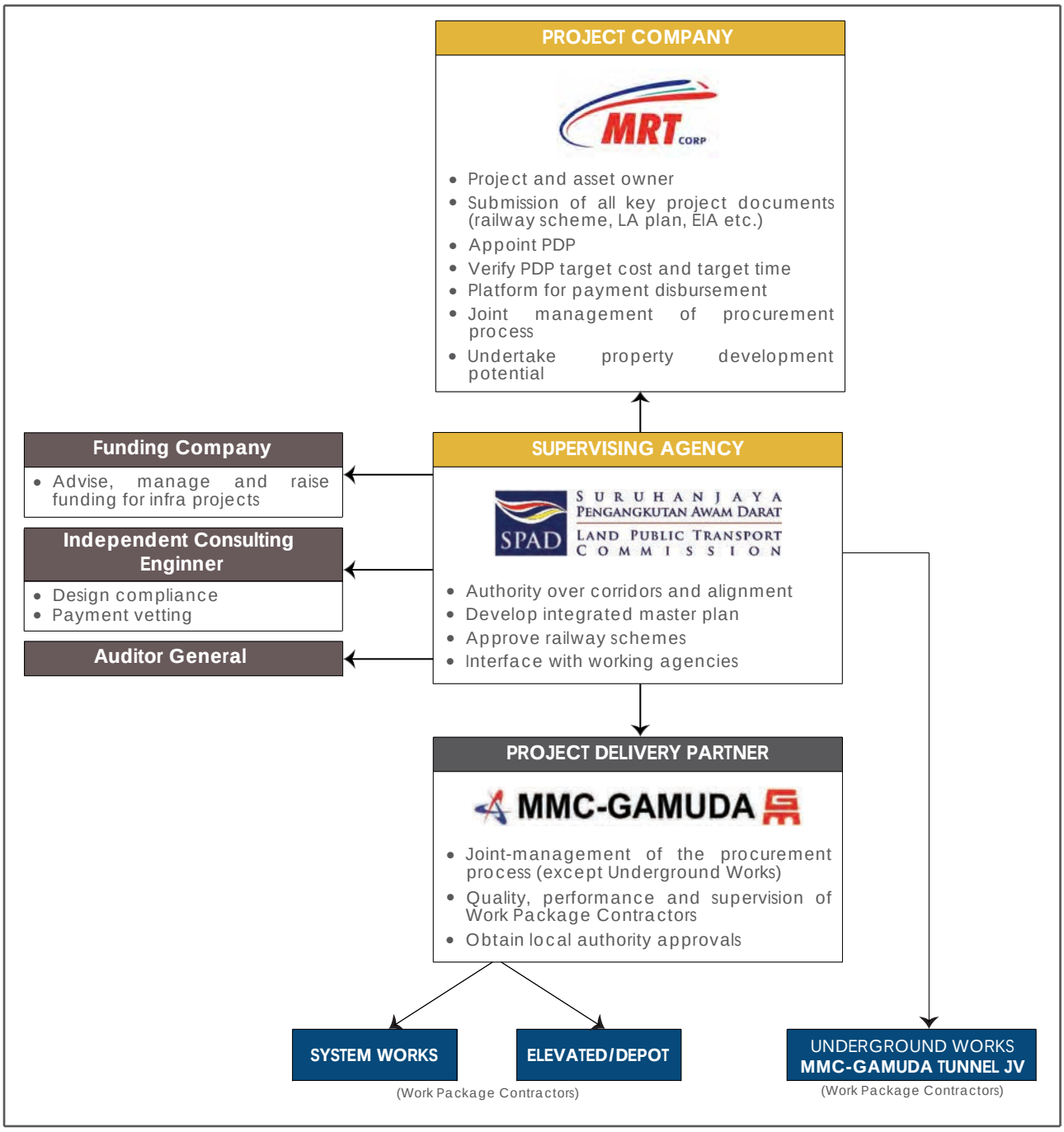
To date, the first line of the KVMRT project, the MRT Line 1 is currently under construction. It stretches a total of 51km, will run underground for a distance of 9.5km beneath the center of Kuala Lumpur while the rest of the alignment is elevated. The line will have 31 stations of which 7 will be underground. The MRT Line 1 connecting Sungai Buloh to Kajang, began construction in July 2011 and is expected to be completed by 2017. It is expected to be completed in two phases: the Sungai Buloh to Semantan section and the Semantan to Kajang section. Phase one of the MRT Line 1 from Sungai Buloh to Semantan is expected to be operational by the end of 2016. Meanwhile, phase two, from Semantan Station to Kajang Station is expected to be operating by July 2017, allowing trains to run the entire alignment. Reportedly, the line will be served by four-car train sets with a total capacity of 1,200 commuters. The trains will run at a frequency of 3.5 minutes.[57]

It was further reported that MRT Corp has secured final approval to the project including final alignment and station locations, from the Malaysian government in October 2015, to develop the MRT Line 2 for the Sungai Buloh-Serdang-Putrajaya link. The MRT Line 2 will stretch from Sungai Buloh via Central Business District of Kuala Lumpur to Bandar Malaysia, Kuchai Lama, and Serdang and ends at Putrajaya. It will be 52.2km long with 13.5km of underground section linking Jalan Ipoh to Kuchai Lama, and 38.7km of viaduct; serving 2 corridors with a population of approximately 2 million. The MRT Line 2 will consist of 37 stations: 25 elevated and 11 underground stations.[58] MMC-Gamuda is again engaged as the Delivery Partner for all elements of MRT Line 2 and its construction divisions have again combined in a joint venture to bid for the contract to build MRT Line 2, particularly its underground section, which will be similar in scope as the underground section of MRT Line 1.[59]

Meanwhile, the MRT Line 3 which is part of the third and final line for the KVMRT project is currently at its planning and development stage. The announcement of the project will be revealed at a later date.

57 MRT Corporation (n.d.)
58 Suruhanjaya Pengangkutan Awam Darat (SPAD) (n.d.)
59 MRT Corporation (n.d.)

Figure 8: Project Structure of the KVMRT [60]



60 MRT Corporation (n.d.)

ROLE OF PUBLIC &PRIVATE SECTORS

03

3. Role of Public and Private Sectors

3.1. Public-Private Partnership (PPP)

The Public Private Partnership in Malaysia is an important component of the Malaysia Incorporated concept – a development approach introduced in 1983. PPP in Malaysia is defined broadly as an arrangement where the private sector provides services and invests in infrastructure assets, which would traditionally have been undertaken by the government. At the crux of this arrangement there is an optimal risk sharing among the parties involved, mutually pre-agreed performance parameters that govern the conduct of the business, and a definite duration for the service concession. Another important characteristic is the continuing interest of the government, directly in the form of an equity holding or indirectly in the form of operational oversight in the projects. These features differentiate PPP projects from the privatization model, whereby the government no longer has control of or interest in the entity.

In 2009, the Public Private Partnership Unit (3PU) (Malay: Unit Kerjasama Awam Swasta, UKAS) was established via administrative arrangement, accountable to the Prime Minister's Department. This re-affirms its position as a central agency within Malaysia's administrative framework and reflects a strong political commitment to the PPP.[61]

Today, the PPP model has been applied in a wide range of public projects, such as the development of administration complexes, university campuses (including student residential buildings), hospitals, highways and bridges, integrated transport terminals, port facilities, medical equipment and supplies, solid waste treatment and public cleaning, power generation, and a 'guest worker' monitoring system. In the Malaysian context, apart from budgetary considerations, PPP is seen as an avenue to benefit from private sector innovation and efficiency. It is also a way to promote shared responsibility and accountability in the provision of public services, as well as to bring about optimal utilization of the nation's resources.

61 Unit Kerjasama Awam Swasta, Malaysia (n.d.)

Table 7: Differences between Conventional, PPP and Privatisation Approach[62]

Conventional	PPP	Privatisation
Procurements are funded directly via public budget	Funding via private financial resources without public sector's explicit guarantee	Funding via private financial resources without implicit or explicit public sector guarantee
Immediate impact on public sector financial position	Impact on public budget spreads over the duration of the concession	No impact on the level of public sector expenditure
Risks are entirely borne by public sector	Risks are allocated to parties which can manage them most efficiently	Risks are entirely borne by the private sector
Extensive public sector involvement at all stages of project life	Public sector's involvement is through enforcement of pre-agreed Key Performance Indexes (KPIs)	Government acts as a regulator
Applicable for projects with high socio-economic returns and those justified on strategic considerations	Applicable for projects with commercial viability	Applicable for projects with high commercial viability

Since the introduction of the PPP approach in 1983, around 700 projects have been implemented using the PPP and/or privatization approach.[63] These projects cut across a variety of sectors, such as transport, highways, communication, health, energy and utilities, education and training, and general administration. Given the differences in output specifications, risk appetite, payment structure, and a host of other factors, four distinct PPP models have been adopted, which are further described below[64]:

- Concession Model
  - *This model is used for highways and bridges and it is normally structured on the build–operate–transfer (BOT) concept*

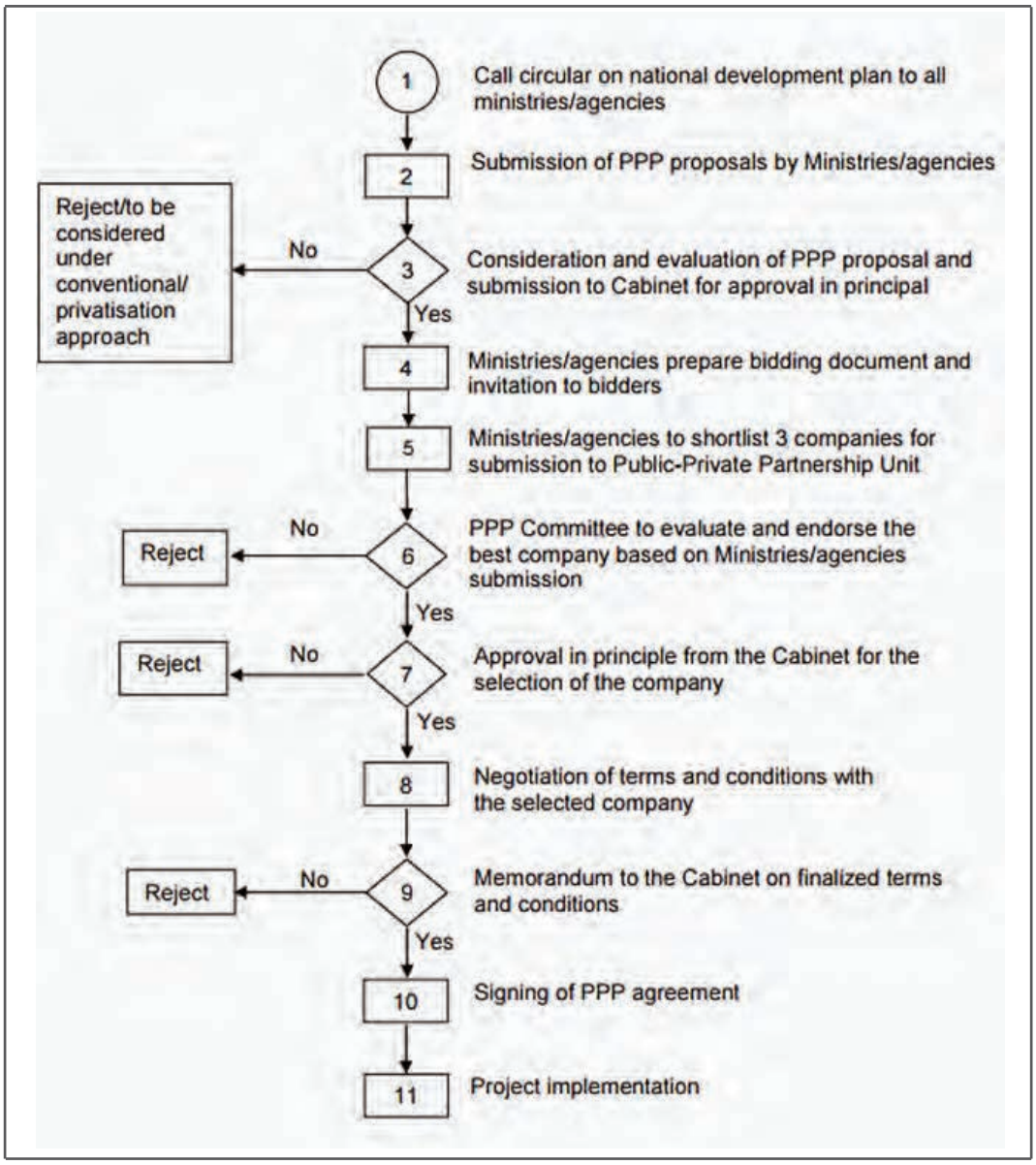
- Accomodation Model
  - *This is used for administration complexes, teaching hospitals, and university branch campus projects. The model is typically structured on the build–lease–maintain–transfer approach. The government has introduced the build–lease–operate–maintain–transfer approach for this model too.*

62 Prime Minister's Department, Malaysia (2009)
63 Amongst 700 projects, there are about 600 projects that are broadly considered as PPP.
64 Prime Minister's Department (2009)

- Process Plant Model
  - *This particular model is being used for power generating projects. It is structured with two forms of payment, a fixed capacity payment and a utilization payment*

- Usage Model
  - *This model is suitable for projects with high risk of technology obsolescence where the government is not planning to take ownership of the underlying asset upon the expiry of the contract, such as for services in sophisticated medical facilities. Investment is recouped from charges imposed on the utilization of the facilities by the ultimate users, that is, user charges.*

Figure 9: Process Flow of PPP Projects[65]



65 Prime Minister's Department (2009)

3.2. Project Delivery Partner

Normally a Project Delivery Partner (PDP) represents an entity that possesses significant amount of project and construction expertise that will assume the project delivery risk from the project owner after the project has been competitively tendered. With the PDP strategy, the project owner enjoys the best of both worlds where the mega project is divided into multiple packages for competitive bidding to ensure maximum spread, while reducing risk of cost overrun and late completion – borne by the PDP.

The main concept of PDP is that the PDP assumes complete risk ownership and accountability for project deliver, from conceptualization until the date of completion, including specifications to cost, time and quality by integrating all contractors (civil, infrastructure and systems) involved. Via this concept, regardless of the total cost of the project being less than or equal to the targeted cost, the PDP would be entitled to the full fee. However, if the project cost is more than the targeted cost, the fee would be cut in accordance with the agreed formula.[66]

Malaysia started to implement the project delivery partner (PDP) concept in transport and infrastructure projects, particularly those of large scale. Examples of PDP implementation in this sector will be discussed in the next sub-chapter.

3.2.1. PDP in Large-Scale Projects

3.2.1.1. Klang Valley Mass Rapid Transit (KVMRT)

Currently, the KVMRT project is the largest transport infrastructure project in Malaysia. With the KVMRT project, the PDP concept was introduced, a first of its kind in the industry where the primary function is to ensure the successful completion of the MRT within the pre-determined target cost and date. Enabling a more efficient and cost effective way of project delivery, the PDP concept is now an accepted industry standard and has been adopted and implemented repeatedly within the engineering fraternity.

With a proven track record in large-scale project management and extensive know-how in the construction of various civil infrastructure and tunneling projects, MMC-Gamuda - a 50:50 joint venture company between Gamuda and MMC Corporation – was appointed by the government of Malaysia as the Project Delivery Partner (PDP) for the mega MRT project in January 2011.

66 Gamuda Berhad & The Star Online (n.d.)

As PDP, Gamuda's primary function is to ensure the successful completion of the MRT within the pre-determined target cost and date. With PDP, the government is ensured of a smooth implementation of the massive project. In the following the PDP's role within the massive MRT project is summarized:

- Oversee the overall performance of Design Consultants and Work Package Contractors
- Manage the procurement process for all construction work packages jointly with the government of Malaysia
- In the event a contractor or sub-contractor does not meet pre-determined work package requirements, the PDP will step in at no risk to project delivery cost and time
- To undertake all preparations, submissions and procurement of all approvals for the execution of the project

Upon the successful implementation of the PDP concept with the MRT Line 1, Gamuda is also appointed as PDP for the MRT Line 2, and now for the Penang LRT project.[67]

3.2.1.2. LRT 3

Prasarana Malaysia Bhd has appointed Malaysian Resources Corp Bhd (MRCB) and George Kent (M) Bhd as the project delivery partner (PDP) for the LRT3 project. The project is a series of public railway network extension efforts to make public transportation more accessible to residents in the Klang Valley and Selangor.

It was reported that construction of the line is set to begin in the first quarter of next year with a first quarter 2020 completion date. The 37km-long line, which is scheduled to begin operation on August 31, 2020, will connect Bandar Utama, Damansara and Johan Setia, Klang; with a total of 25 planned stations. This includes one underground station with the other being elevated stations, whereas, 10 stations are expected to have park-and-ride facilities.[68]

The LRT3 line will feature a number of integrated stations with paid-to-paid integration with those of other lines. Planned interchanges are the Bandar Utama MRT station (250-meter distance), Station 3 of the LRT Kelana Jaya Line (100 meters), the Pelabuhan Klang KTM station (450 meters) and two stations (SIRIM and Stadium in Shah Alam) on the KL-Klang BRT line.[69]

67 Gamuda Berhad (n.d.)
68 Paultan.org (2015)
69 Ibid.

3.2.1.3. Pan Borneo Highway

To accelerate the social and economic growth of the East Malaysia states of Sabah and Sarawak, a major effort to fully develop and upgrade the Pan Borneo Highway was announced by Malaysia's Prime Minister in April 2013.[70] This was followed by a commitment in the Malaysia Budget 2015. Pan Borneo Highway is a road network, building on Borneo Island that links two Malaysian states, Sabah and Sarawak, with Brunei Darussalam. The Pan Borneo Highway will be the transportation backbone of the states of Sabah and Sarawak and will play a major role to open up economic corridors and opportunities in areas it transverses.

Lebuhraya Borneo Utara Sdn Bhd (LBU) is the PDP for the Pan Borneo Highway of the Sarawak portion. LBU is supported by a board of directors with highway construction specialist expertise crucial for the delivery of the highway according to time and budget specifications. LBU made a commitment to the government to involve local talents, contractors, companies and resources towards building up local expertise in highway construction.[71]

Pan Borneo Highway of the Sarawak portion was officially launched by the Prime Minister in Bintulu on 31 March 2015. Construction works along a 43 km stretch from the Nyabau to Bakun junctions began soon after. When completed in early 2022, Pan Borneo Highway of the Sarawak portion from Telok Melano to Merapok will span a total distance of 1,089 km.

On the other hand, Borneo Highway PDP Sdn Bhd (BHP) has been recently chosen as the PDP to undertake Phase 1 of the Sabah portion of the Pan Borneo Highway that will reportedly cost RM12.8 billion. Under the agreement, BHP will implement, supervise, manage and deliver the project as the PDP. To be completed by 31st December 2021, the Sabah Pan Borneo portion will run from Sindumin to Tawau. The first package will cover Papar and Donggongan under Phase 1.[72]

3.3. Procurement of Public and Private Projects

In the infrastructure sector, there are different construction project procurement systems practiced in the Malaysian context: conventional systems paired up with modern ones. Different procurement systems entail different construction project management systems, organizing individuals, firms, companies and regulators for designing, managing and constructing products. Many new procurement systems evolved in the 1980s and 1990s for Malaysian clients. However, the rather conventional methods are still dominant.

The most common used project procurement system in Malaysia in the public and private sector is "Lump Sum-Drawing and Specification (LSDS)". The "LS-Firms Bill of Quantities (LSBQ)" system follows on the second rank by both sectors. The third highest scorer is "Approximate BQ's (ABQ)". Those systems are considered traditional procurement systems. "Design & Built" (D&B) as well as "Turnkey", which are alternative types of procurement, are ranking below the traditional systems. Traditional lump-sum methods are still very common among Malaysian public and private clients.

70 Lebuhraya Borneo Utara (n.d.)
71 Ibid.
72 The Borneo Post (2016)

Table 8: Project Procurement Methods in the Public & Private Sectors[73]

Procurement types		Public Sector	Ranking	Private Sector	Ranking	Total Percentage
Conventional Methods	LSDS	50.7%	1	42.6%	1	93.3%
	LSBQ	34.2%	2	25.0%	5	59.2%
	ABQ	20.5%	4	38.2%	2	58.7%
Alternatives	Package Deals	2.7%	8	7.4%	8	10.1%
	Turnkey	23.3%	3	26.5%	4	49.8%
	D&B	16.4%	5	35.3%	3	51.7%
Management	Management Contracting	6.8%	7	19.1%	7	25.9%
	Construction Management	8.2%	6	22.1%	6	30.2%
Mode II	Private Finance Initiative (PFI)	1.4%	9	2.9%	10	4.3%
	Public-private Partnership (PPPs)	2.7%	8	4.4%	9	7.1%
	Job Ordering Contracting (JOC)	0.0%	10	2.9%	10	2.9%
	Built, Operate, Transfer (BOT)	2.7%	8	1.5%	11	4.2%
	Cost Plus	1.4%	9	2.9%	10	4.3%

73 Kementerian Kerjaraya Malaysia (n.d.)

3.4. Projects in Budget 2016

Projects in the transport and infrastructure sector announced by Prime Minister Najib Razak in the Malaysia Budget 2016 are listed below[74]:

- Improvement of logistical infrastructure, including the Damansara-Shah Alam Elevated Highway (DASH), Sungai Besi-Ulu Klang Elevated Expressway (SUKE), Pulau Indah Expressway and Central Spine Road highway
- RM900 million for Jalan Tun Razak Traffic Dispersal Programme, to reduce traffic along the road
- To study the construction of a coastal highway between Masjid Tanah to Klebang and from Klebang to Jambatan Syed Abdul Aziz in Melaka
- RM42 million to build Mukah Airport in Sarawak, and to renovate airports in Kuantan, Pahang and Kota Bharu. Kelantan. Studies will also be made to improve the airport in Batu Berendam, Melaka
- A more efficient public transport system for those outside major cities
- LRT Ampang Line, 18.1 km, completed in March 2016. LRT Kelana Jaya Line, 17.4 km, expected to be ready in the middle of 2016 (update as of April 2016). Both projects are worth RM10 billion
- MRT Sungai Buloh Line-Semantan will be ready in December 2016. Phase two, Semantan-Kajang to be ready mid-2017. Total 51 km, worth RM32 billion
- MRT2 Sungai Buloh-Serdang-Putrajaya, total 52 km, to benefit 2 million residents. Costs approximately RM28 billion. Initial work will begin in Q2 2016, completed by 2022
- LRT3 Bandar Utama, Damansara-Johan Setia, Klang, total 36 km, to benefit 2 million residents. Costs approximately RM10 billion. Initial work will begin in 2016, completed by 2020
- Kuala Lumpur-Singapore High Speed Rail discussions to continue with Singapore
- BRT KL-Klang project to go ahead, worth over RM1.5 billion. New BRT Kota Kinabalu, RM1 billion
- Upgrade works of rural road network, total 700 km, worth RM1.4 billion. Also, improvements of roads around FELDA settlements, RM200 million
- Road network coverage outside major cities have been expanded to 51,000 km, from 46,000 km in 2009
- Sarawak Pan Borneo Highway, total 1,090 km, to be completed by 2021, worth approximately RM16.1 billion. Phase one of this project in Sabah to begin in 2016, total 706 km, from Sindumin to Tawau, worth RM12.8 billion

74 Ministry of Finance , Malaysia (n.d.)

- Pan Borneo Highway which is under construction will be toll-free
- Rural Air Services in Sabah, Sarawak and Labuan to be exempted from GST
- Malaysian Communications and Multimedia Commission (MCMC) will provide RM1.2 billion, among others, for rural broadband projects which will see a four-fold increase in internet speed from 5 megabyte per second to 20 megabyte per second, National Fibre Backbone Infrastructure, Highspeed Broadband and undersea cable system
- RM250 million is allocated for the national broadcasting digitalization project to enhance audio visual quality and provide value-add to television content as well as interactive data transactions
- The government will continue with efforts to implement infrastructure development in rural area as follow:
  - *RM1.4 billion to build and upgrade 700km of rural roads nationwide. A sum of RM200 million is provided for the upgrading of roads in FELDA settlements*
  - *RM878 million for the Rural Electrification Project covering 10,000 houses and RM568 million for the Rural Water Supply Project to benefit 3,000 houses*
  - *RM60 million for the Social Amenities Programme for drainage projects to mitigate floods. Emphasis will be given to states affected by floods such as Kelantan, Kedah, Terengganu, Pahang, Sabah and Sarawak*
  - *As a catalyst for entrepreneurship in rural areas and for rural communities, RM70 million is allocated for continuation of the Rural Business Challenge (RBC) and Sustainable Rural Programmes*
  - *RM67 million is allocated to the MARA Bus Transport Project for operating buses on uneconomic routes in rural areas*

3.4.1. Special Focus Projects

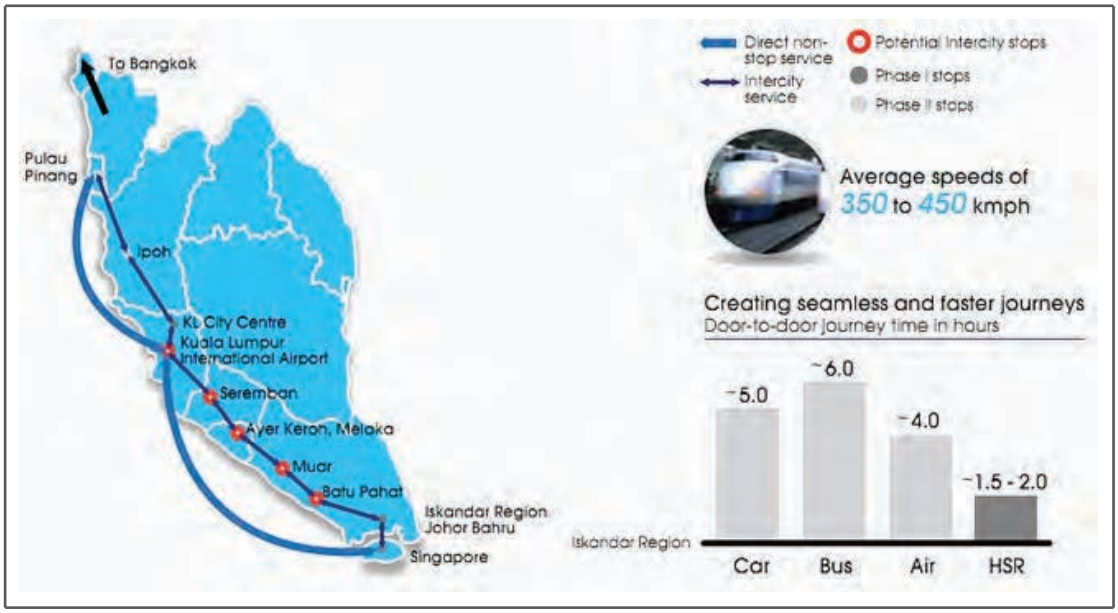
3.4.1.1. Kuala Lumpur – Singapore High Speed Rail Project (HSR)

The primary objective for the construction of the high speed rail is to reduce the travel time between Kuala Lumpur and Singapore to 90 minutes by strengthening the link between two of Southeast Asia's most vibrant and fast-growing economic engines. This Entry Point Projects (EPP) is not only about connecting and transforming people mobility between two cities in a shorter time, but also about developing cities along the rail alignment that is able to leverage the availability of the high speed rail. This has been evident in other countries which have been transformed by connection to a high speed rail such as Japan and France.[75]

SPAD, the Land Public Transport Commission, which leads this EPP, has secured the approval of the Economic Council on the High Speed Rail contracting model and project structure. The Vision Document pertaining to Phase One of the Socio-Economic Development Plan was also completed. The Prime Ministers of Malaysia and Singapore had, at the Leaders' Retreat 2013, jointly announced the Southern Corridor High Speed Rail project. At the same forum in 2014, the leaders had confirmed Malaysia's terminal location in Bandar Malaysia and Singapore terminal location in Jurong East.[76]

75 BMI Research (2016)
76 Ibid.

Figure 10: Kuala Lumpur - Singapore High Speed Rail[77]



In addition, a High Speed Rail Work Group under the Joint Ministerial Committee platform between Malaysia and Singapore has been formed to ensure steady progress of this game changing project. Discussions at this platform are expected to include various implementation aspects such as high speed rail design and operations aspects, security and immigration requirements, appropriate financing and governance framework. To facilitate discussions on the project further, the Prime Ministers also agreed to co-located Customs, Immigration and Quarantine (CIQs) in order to facilitate ease of travel in line with the improved travel time proposition brought about by the high-speed rail. This arrangement would result in high speed rail passengers going through the CIQ processes only once throughout their high speed rail journey. SPAD is also in discussions with state and local authorities to finalize the Malaysian alignment.[78]

3.4.1.2 - Penang Public Transport Master Plan

Penang Island, located in the north of Peninsular Malaysia is quickly becoming a city with growing population and industry. Dubbed as Malaysia's technology hub, Penang Island has attracted a number of investments. It, however, is faced with lack of efficient transportation infrastructure. In light of the traffic situation in the island, the government presented the Penang Public Transport Master Plan, a comprehensive transportation masterplan as a solution to cope with the issues and challenges in the transport and infrastructure sector on the island. According to the masterplan, several projects are to be commenced within the next 15 years by the federal and state government, as well as private investors – this would provide strong business leverage and great opportunities for foreign players. With the masterplan, the traffic situation on the island is hope to be improved by 2030.[79]

77 Economic Transformation Programme (n.d.)
78 BMI Research (2016)
79 Germany Trade & Invest (2014)

The masterplan is expected to cost a total investment volume of RM27 billions, out of which RM16.4 billion will be used for the construction of highways. Parts of the public transport investments include the construction of a tram system, as well as the expansion of the bus system and ferry services – which are expected to cost RM9.7 billion.[80]

Table 8: Estimated Cost of Purchase of Public Transportation until 2030[81]

Type of Transport	No. of Units Required by 2030	Cost per Unit (RM Mio.)	Total Cost (RM Mio.)
Tram/LRT for 7 lines	58	10	580
Short Distance Bus	43	1	43
Short Distance Train	12	30	360
Ferry for 400 Passengers	4	15	60
Ferry for 200 Passengers	11	10	110
Ferry Shuttle Bus	114	0.7	80
City Bus	285	0.7	200
Shuttle Ferry for 100 Passengers	7	6.5	46
TOTAL (RM Mio.)			**1,479**

Table above shows that the 7-line Tram or LRT have the largest share by estimated total cost of purchase. Reportedly, the longest and most costly line would be the Airport Line and Georgetown Orbital Loop Line. The construction of the lines are expected to commence before 2020, however the system is only expected to be operated in the next decade. It is further reported that the Tram and LRT will run at a speed of 40km per hour, which is considerably faster than travelling by cars during rush hours. Furthermore, via the masterplan, Penang aims to extend its public bus transportation system, with the purchase of an additional of 440 buses. Despite the completion of its second bridge that connects the mainland and the island in March 2014, the ferry services remain an important transport option to Penang Island. Therefore, the masterplan is to include the purchase of 15 ferries and construction of 7 slip roads. Meanwhile, the Penang Undersea Tunnel, a 6.5 km tunnel that will connect Butterworth, Seberang Perai in the east to George Town, Penang Island in the west is still pending construction.[82]

Although the general framework is predefined by the Penang-Masterplan, projects may be modified within the given framework in order to encourage the participation of experienced companies which possess the expertise and advanced technology. European companies especially have an edge where supplier of specialized high-technology and technical know-how are needed. Further, the government of Penang supports and encourage foreign companies' participation in realizing the masterplan. This also becomes clear by the presentation of the Masterplan, which emphasizes the allowance of forming of consortia and joint ventures between local and international companies.[83]

80 Germany Trade & Invest (2014)
81 Ibid.
82 Ibid.
83 Ibid.

3.4.1.3. Melaka Gateway Island and Deep Sea Port Project

Ministry of Tourism and Culture Malaysia (MoTAC) has been facilitating the development of the Melaka Getaway Island and Deep Sea Port project. The 609-acre project comprising of one natural island and two man-made islands, which is developed by KAJ Sdn Bhd aims to create a tourism island in Malaysia. The project was launched in February 2014, and is scheduled for completion by 2025.[84]

The RM40 billion Melaka Gateway is a project with 12 precincts including residential, commercial, cultural, entertainment and lifestyle elements. It was reported that the 12 precincts are Gateway Entertainment Precinct, Melaka Marina & Cruise Centre, Melaka Historical Walk, Gateway Maritime Arena & Beacon, Branded Fashion District, International Theme Park, Melaka Cultural Walk, Waterfront Marina Villas & Resorts, Gateway Wellness & Lifestyle Precinct, Melaka Skyline Apartments, Lohas Park & Residences and Eco Isle Resorts. Its marina terminal will be the largest in Asia, tapping into the growing number of cruise ships plying the route which currently do not stop at Malacca due to lack of facilities.[85]

The project has confirmed joint ventures between Promethus Marine Pte Ltd for the development of the Melaka Marina and the Royal Caribbean International (RCL) for the construction and operation of its international cruise terminal. Furthermore, the land reclamation for the first island was completed and more progress is expected. This will be the first phase of the project while future phases planned will include the development of high-end hotels, retail outlets as well as other lifestyle attractions. With the development of the project and its cruise terminal, Malaysia aims to improve visitor attractions and berth capacity. Reportedly, a Memorandum of Understanding (MoU) has been signed between RCL and Melaka Getaway – and the terminal is on track on operational launch in 2017.[86]

84 The Sun Daily (2014, February 7)
85 Ibid.
86 The Star Online (2016, June 23)

INDUSTRY CONDITIONS

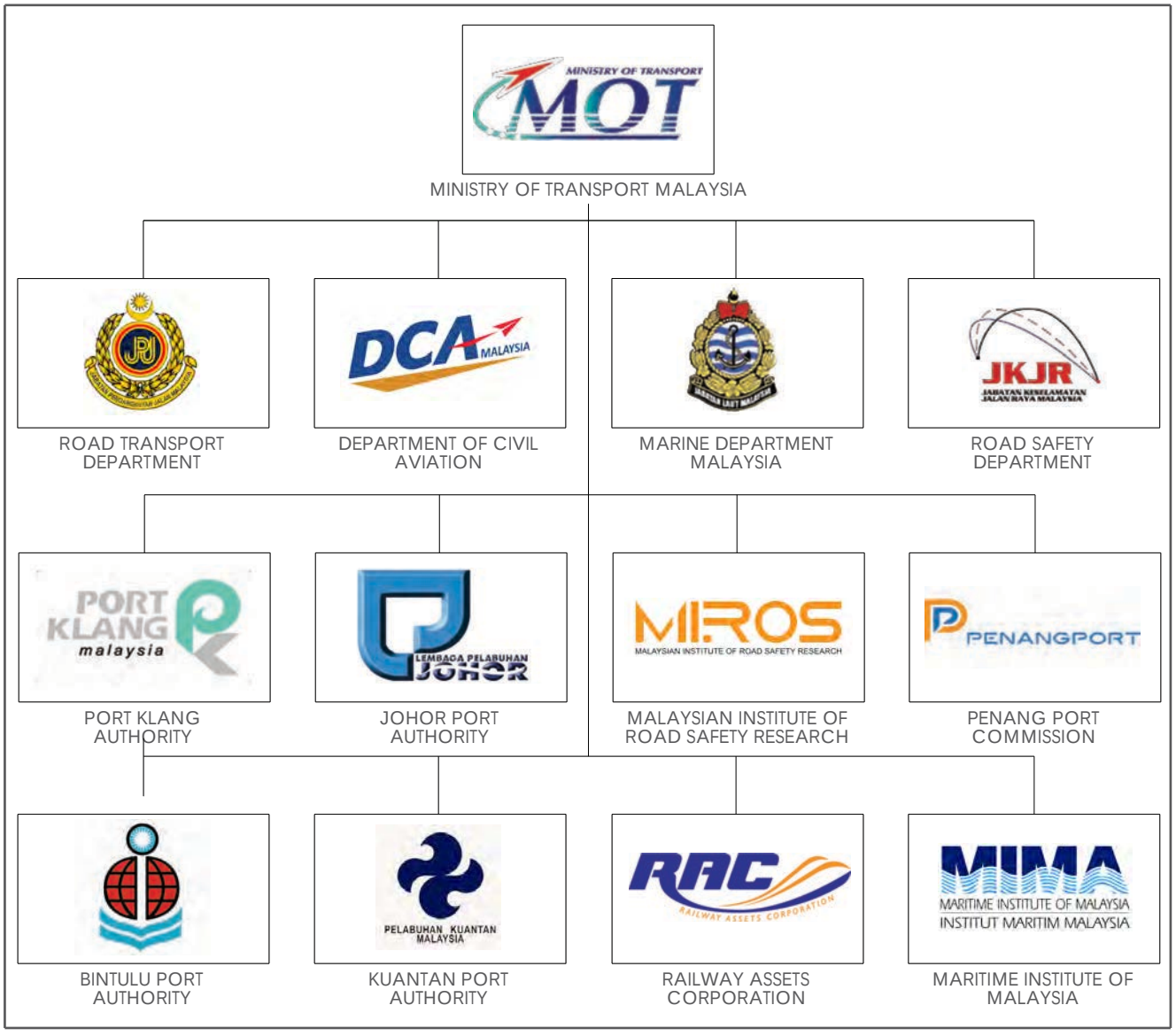
04

4. Industry Conditions

4.1. Relevant Government Authorities

Fundamentally, the Ministry of Transport, Malaysia (MOT) is a policy formulating, planning and supervising entity and its regulatory and policy implementing functions are carried out by various statutory agencies under its purview. The functional responsibilities are structured into four divisions – Land, Logistics, Maritime, and Aviation. These agencies oversee the development of the all aspects of logistics economy, from its infrastructure development, international harmonization of flow of goods, governance of logistics activities to policy development. Malaysia is a signatory to various bilateral and international agreements, conventions and protocols, which are aimed at enhancing efficiency of cross-border trade (i.e.: ASEAN Free Trade Agreement). The responsibility of planning, formulating, negotiating, implementing and managing these agreements is under the purview of MOT.[87]

Figure 11: Organisation Structure of the Ministry of Transport, Malaysia [88]



87 Ministry of Transport, Malaysia (n.d.)
88 Ibid.

On the development of land public transport infrastructure, the Land Public Transport Commission (SPAD) is empowered under the Land Public Transport Act 2010. Its function covers the drawing up policies, planning, regulating and enforcing all matters relating to land public transport and for Peninsular Malaysia. Land public transport covers train, bus and taxi services as well as road- and rail-based freight transport. It works in close cooperation with other enforcement agencies such as the Royal Malaysian Police and the Road Transport Department.

Today, much of the land public transportation system in the GKL/KV, particularly those of rails and buses, are managed and operated by companies fully-owned by the government, or its subsidiaries, such as Prasarana, RapidKL, KTM Berhad, ERL Sdn Bhd, MRT Corp and the most recently established MyHSR Corp, which will be managing and operating the upcoming KL-Singapore High Speed Rail in the future.

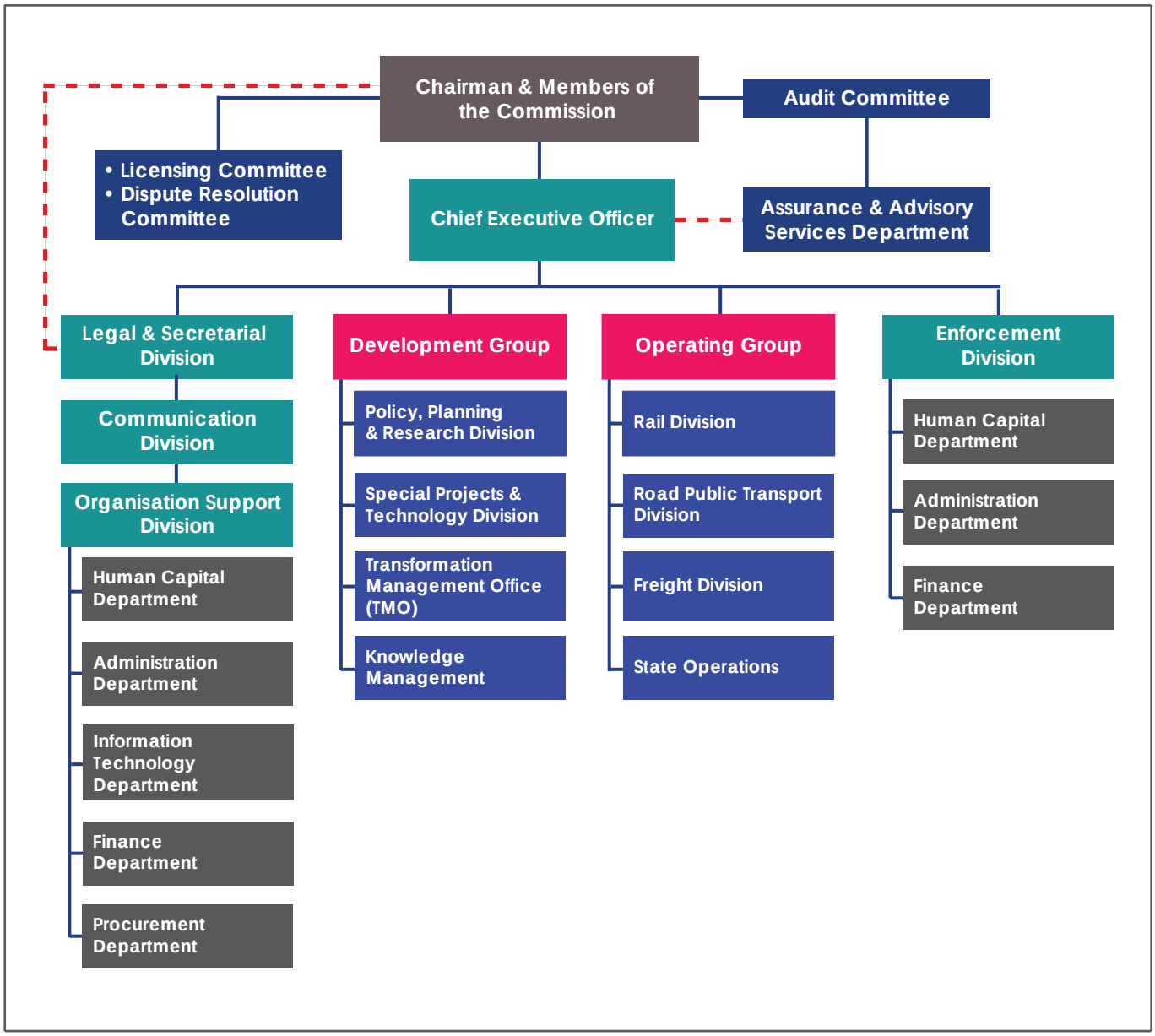
Meanwhile, on the development of road infrastructure, the Malaysian government has entrusted the Ministry of Works (MOW) to build and maintain the Federal Roads. The implementing agency under the MOW is the Public Works Department (PWD). The function of the MOW includes planning the development of the Federal Roads network nationwide, coordinating and monitoring the implementation of the Federal Road projects and regulating the privatized maintenance work of Federal Roads Furthermore it is monitoring the construction, operation, toll handling and maintenance of the tolled expressways. The construction and maintenance of State Roads, on the other hand, fall under the purview of the respective State Government and the PWD of each state. One of the most important functions of PWD is to ensure that the road network system is always safe, efficient and comfortable to the road users.[89]

Apart from the aforementioned agencies, it should be noted that in Malaysia there is no single ministry or department that oversees or is in charge of the whole development of transport infrastructure sector. Instead, several agencies oversee various parts of the sector, but there is no coordination between them, and the state and local governments have no formal authority in this area. As a consequence of the lack of coordination at the government level there is a lack of integration at the system level between the various modes and within each mode in the transport sector.

Other regulatory agencies and related associations in the transport and infrastructure sector are further described in **Annexure A**.

89 Christopher & Lee Ong (2016)

Figure 12: SPAD Organisation Structure[90]



90 Suruhanjaya Pengangkutan Awam Darat, Malaysia (n.d.)

4.2. Government Incentives

The public sector spearheads the infrastructure sector development in Malaysia, including the sub-sector of transport infrastructure. In the transport infrastructure sector, the public sector develops policies, regulates its enforcement as well as creates incentives and required promotions. However, when looking at the infrastructure sector as a whole, it can be said that the sector is largely led by a vibrant, overly protected, private sector – this includes other social and economic infrastructures, which are part of the government initiatives. Furthermore, it can be observed that in the infrastructure sector (in general), the number of PPP, privatization as well as commercialization, have been increasing for the past years.[91] This in turn creates space for private sector participation in what used to be a typical government domain.

In the infrastructure sector, the government incentives typically include large-scale projects. However, to encourage overall economic growth and reduce public debt, the government is not doing it all by itself. Instead, the government has been strongly encouraging and promoting the participation of the private sector. The government keeps to itself the role of establishing the framework, policies, incentives and promotion of such initiatives. The projects are often developed by stages and are expected to be completed over periods of more than 10 years, creating an extremely important source of a variety of projects and business opportunities.

Additionally, through incentives, the government tries to exert influence on the market. Companies who fit into the criteria's of the incentives and offer the desired products or services have higher chances of success. Therefore it is very important for European companies to set up corresponding partnership with a local company. That is why companies have to find out if their products and services meet the government or private sector demand. Depending on the sector positioning strategy, European companies have to choose the right partner.

4.3. Legal Framework

The Malaysian market is highly regulated and protected by laws and policies, which can make market entry difficult for foreign firms. However, several areas have been liberalized in recent years to promote regional or global competition. The three main focuses of transport infrastructure development in Malaysia at the current moment have been the rail, road and port infrastructure.

Rail Infrastructure Sector

The following summarizes applicable laws and regulations for rail transportation in Malaysia[92]:

- Peninsular Malaysia:
  - *The current applicable law and regulations for rail transportation in Peninsular Malaysia is the Land Public Transport Act 2010 ("LPTA"). The Railways Act 1991 was repealed when the LPTA came into force on 31 January 2011. However, all subsidiary legislation made or having effect under the Railways Act 1991 continues to be in force until amended or revoked by any subsidiary legislation made under the LPTA. The LPTA does not apply to the Penang Hill railway and the Sabah railway.*

91 Department of Statistics, Malaysia(2014)
92 Christopher & Lee Ong (2016)

- *The passing of the LPTA was aimed at improving the entire transportation sector by streamlining all regulatory operations under a single body i.e. the Land Public Transport Commission ("LPTC"). The LPTC will propose policies and plans on land public transport and develop strategies to achieve an affordable, safe, reliable, efficient, integrated, competitive and sustainable system.*

  The LPTC as the regulator will also review railway schemes and license applications before making recommendations to the Transport Ministry. The LPTA provides that any person who is intending to construct a railway would need to make an application and deposit a railway scheme which must contain (a) the type and system of the proposed railway, (b) the general routes, (c) the safety aspects and (d) the proposed fare of the proposed railway system. Under the LPTA, constructing railways without ministerial approval or a license is an offence, with penalties of up to RM 500,000 and/or three years' imprisonment. Vocational licenses for train drivers, and publishing timetables and fares are also mandatory under the LPTA.

- East Malaysia:
  - *The applicable legislation for rail in East Malaysia is the Railway Ordinance 1914 and the Railway (Tariff Book) Rules 1979. The Railway Ordinance only specifies the rules relating to the operation of railway but does not specify any licensing requirement for constructing a railway. The Railways Act 1991 unfortunately specifically excludes Sabah railway while the LPTA only applies in Peninsular Malaysia.*

Road Infrastructure Sector

In the road infrastructure sector there are 2 types of roads in Malaysia, namely the Federal Roads and State Roads. This is further described below[93]:

- Federal Road:
  - *Federal Roads are all roads declared to be Federal Roads under the Federal Roads Act 1959 ("Act 376"). This category of roads includes the National Expressways and Highways under the administration of the Malaysian Highway Authority. Toll Expressway like the North-South Expressway and other toll highways are all classified under the category by an order published in the form of Gazette. Also included are the highways and other roads under the administration of the PWD like the major interurban roads joining the state capitals and roads leading to points of entry to and exit from Malaysia. Other roads classified under this category are the Regional Development Scheme Roads, such as those within the Federal Land Development Authority (FELDA) schemes. Federal Land Consolidation Authority (FELCRA) schemes and other Regional Development Authority Scheme such as Pahang Tenggara Development Authority Scheme, etc. Minor roads leading to and within Federal Government Institutions are also classified under this category*

93 Christopher & Lee Ong (2016)

- State Roads:
  - *The term State Road generally comprises of the primary roads providing intra-state travel between the district administrative centers. Other roads included in this category are the Urban Collector Roads and other minor roads within the villages and rural inhabited areas. Roads within the Federal Territory of Kuala Lumpur and the island of Labuan which are not designated as Federal Roads are classified under this category.*

Laws governing road infrastructure in Malaysia are listed below[94]:

- Highway Authority Malaysia (Incorporation) Act 1980[95]
  - *An Act to establish the Highway Authority Malaysia to supervise and execute the design, construction, regulation, operation and maintenance of inter-urban highways, to impose and collect tolls, to enter into contracts and to provide for matters connected therewith.*

- Federal Roads (Private Management) Act 1984 (Act 306)
  - *Act 306 was enacted to allow the Malaysian government to grant private developers the right to collect tolls in respect of a Federal Road, bridge or ferry. Act 306 allows the Malaysian government to authorize any person who has agreed to construct, re-construct, upgrade, repair or maintain any road, bridge or ferry which has been declared or is to be declared a Federal road, bridge or ferry under Act 376 or which is in any Federal Territory, to demand, collect and retain tolls for such period as may be specified for the use of such road, bridge or ferry by any person or class of vehicles.20 In short, Act 306 enabled private developers to construct, operate and maintain new road systems and thereafter recover the costs of doing so through the collection of tolls.*

- Tolls (Roads and Bridges) Act 1965 (Act 416)
  - *Act 416 provides that the MOW may impose tolls to be paid for the use by vehicles if such roads or any part thereof or such bridges as may be specified. Here, "roads" and "bridges" refers to Federal Roads and Federal Bridges, respectively*

- Road Transport Act 1987 (Act 333)
  - *Act 333 provides for the regulation of motor vehicles and of traffic on roads and other matters with respect to roads and vehicles thereon, the protection of third parties against risks arising out of the use of motor vehicles, the co-ordination and control of means of and facilities for transport and means of and facilities for construction and adaptation of motor vehicles, and connected purposes. Part III of Act 33321, provides for highway codes, speed limits, restriction of use on specified roads, restriction of vehicles, pedestrian crossings, erection of traffic signs, construction of access and drains and laying of public utility installations to existing roads, restriction of vehicles on bridges and others.*

94 Christopher & Lee Ong (2016)
95 Lembaga Lebuhraya Malaysia (n.d.)

Ports Infrastructure Sector

Meanwhile, on the ports infrastructure, administrations are legislated under the port acts. The following shows the relevant port authorities and their respective related actsw[96]:

Major Ports	Local Authorities	Related Acts
Penang Port	Penang Port Commission	Penang Port Commission Act 1955
Port Klang	Port Klang Authority	Port Authorities Act 1963
Johor Port	Johor Port Authority	
Port of Tanjung Pelepas	Johor Port Authority (Tanjung Pelepas)	
Kuantan Port	Kuantan Port Authority	
Kemaman Port	Kemaman Port Authority	
Malacca Port	Malacca Port Authority	
Teluk Ewa Port	Teluk Ewa Port Authority	
Bintulu Port	Bintulu Port Authority	Bintulu Port Authority Act 1981

In addition, major port operations have been privatized to the following operators:

- Port Klang : Northports Sdn Bhd (North Port) and Westports Sdn Bhd (West Port)
- Johor Port : Johor Port Sdn Bhd
- Kuantan Port : Kuantan Port Consortium Sdn Bhd
- Bintulu Port : Bintulu Port Sdn Bhd
- Tanjung Pelepas Port : Port of Tanjung Pelepas Sdn Bhd
- Pulau Pinang Port : Penang Port Sdn Bhd

96 Ministry of Transport, Malaysia (n.d.)

ISSUES & CHALLENGES
FOR EU PLAYERS

05

5. Issues and Challenges for EU Players

5.1. Growing Competition from China

The main challenges for EU service providers in the transport and infrastructure sector come mainly from the Chinese competitors. Under the premiership of Prime Minister, Najib Razak, since 2009, China has moved to the fore. It can be observed that there is a growing presence of China-based companies in the Malaysian transport and infrastructure sector in the recent years. Over the past five years, Malaysia has witnessed successful participation of China-based companies in high-profile infrastructure projects in the country.

With the rapid development of the rail sector, in particular, which is expected to drive infrastructure growth in Malaysia, the Malaysian rail business is lucrative and has attracted a lot of attention. Subsequently, the growing rail sector has prompted further interest from China-based companies.

Table 10: China-based Firms in Large Infrastructure Projects[97]

Project	Main Foreign Contractors	Country of Origin	Cost (USD Billion)	Completion Date
KL-Singapore High-Speed Rail	To Be Determined	To Be Determined	9.7 – 14.5	2023
Gemas-Johor Bahru Electric Double-Track Rail	China Railway Construction Corporation	China	2.0	2020
944MW Murum Dam	Three Gorges Development Company	China	1.0	2015
Second Penang Bridge	China Harbour Engineering Company	China	1.1	2014

It is said that China Railway Rolling Stock Corporation (CRRC) opened a USD97 million rolling stock manufacturing plant in the country in July 2015. More significantly, it was reported that about 80 percent of the Malaysian rolling stocks in the rail sector are Chinese-made. It was further reported that the China-based company, CRCC, which is also part of the Chinese consortium led by freight transporter China Railway is bidding for the Kuala Lumpur-Singapore High Speed Rail project.[98] Furthermore, reportedly, in March 2016, China Railway Engineering Corporation announced its plan to set up its multi-billion regional headquarters in Bandar Malaysia, which will host the main terminal for the planned Kuala Lumpur-Singapore High Speed Rail. [99]

97 Financial Times (2016, March 9)
98 Ibid.
99 The Star Online (2016, April 17)

The High Speed Rail project connecting Kuala Lumpur to Singapore is a national interest project and is driving tremendous interest from industry players and service providers particularly from China who are aggressively entering the market, offering very competitive pricing, compared to European service providers. Additionally, there have been talks that Malaysia is favorable to the High Speed Rail project being awarded to a Chinese company, whereas its neighboring country Singapore had a preference for either a Japanese or European company.[100]

For the past years, it appears that several large infrastructure projects in Malaysia, especially those involving rail, are being taken up by Chinese firms. In fact, investments from China in the transport, construction and infrastructure sectors are today standing at a significant level.[101] Oftentimes, projects seem to be given as a wider political barter agreement across the industry sectors – for instance, China may commit to perform infrastructure projects in Malaysia and in return, it receives energy in the form of palm oil or crude palm oil.

For European players in the transport and infrastructure sector, the influx of Chinese players into the market, which is further supported by the Malaysian government, becomes an increasing barrier as the Chinese continue to push the price down. On top of that, Chinese players are also catching up in terms of technology in the sector, beginning with components and parts manufacturing as well as assembly works and integration works, among others. Therefore, European players will need to be more competitive especially in terms of pricing in order to be successful in the Malaysian market.

5.2. Local Content Requirement

Offset Programme

The government of Malaysia is fully committed to enhance the nation's industrial, technological and overall economic capability with the aim of further increasing national competitiveness and supporting high-income society agenda. It is the policy of the government to implement offset programme on all government procurement of supplies, services and works. Offset instrument is leveraged by the government to further support the national aspiration to develop Malaysia as a sustainable high-end industrial and technological base.

Under the offset agreement, selected main contractors are required to give back the same value of the contracts won, directly or indirectly, to Malaysian companies as part of plans to build local capacity and expertise. The idea behind the programme is such that the main contractors have basically won multibillion ringgit projects – hence, the government steps in to require them to give back some portion of their potentially hefty profits to the country. The offset programme could either flow back with subcontracts given to local companies that will handle certain jobs or require the main contractor to provide certain expertise to develop some other sector that is deemed beneficial to the nation's development. With this being imposed and made a requirement, foreign players in the transport and infrastructure sector may be required to sign an offset agreement and ensure work is carried out in accordance with the offset programme agreement.

100 Asean Today (2016, March 31)
101 Financial Times (2016, March 9)

In the ongoing MRT Project, there are three main foreign companies that collaborate with MRT Corp to provide trainings in various disciplines in rail systems and technology. These companies include Siemens, Mitsubishi and Bombardier.[102]

Foreign Participation in Government Procurement

In Malaysia, government procurement is used as a tool to achieve socio-economic and development objectives aimed at encouraging a greater participation of Bumiputera in the economy, transferring technology to local industry, reducing the outflow of foreign exchange, creating opportunities for local service-oriented companies, and enhancing export capability. This is also applied in the transport and infrastructure sector here. While open tendering is mandatory for tenders over RM 500,000 (approximately EUR 100,000), exceptions for negotiated tenders and single-source contracts also occur in practice. Government procurement rules do not apply to PPP projects, which are often used for infrastructure development. There is no mechanism for aggrieved tenderers or concerned citizens to challenge either procurement rules or specific decisions.

Barriers in Foreign Participation in Government Procurement:

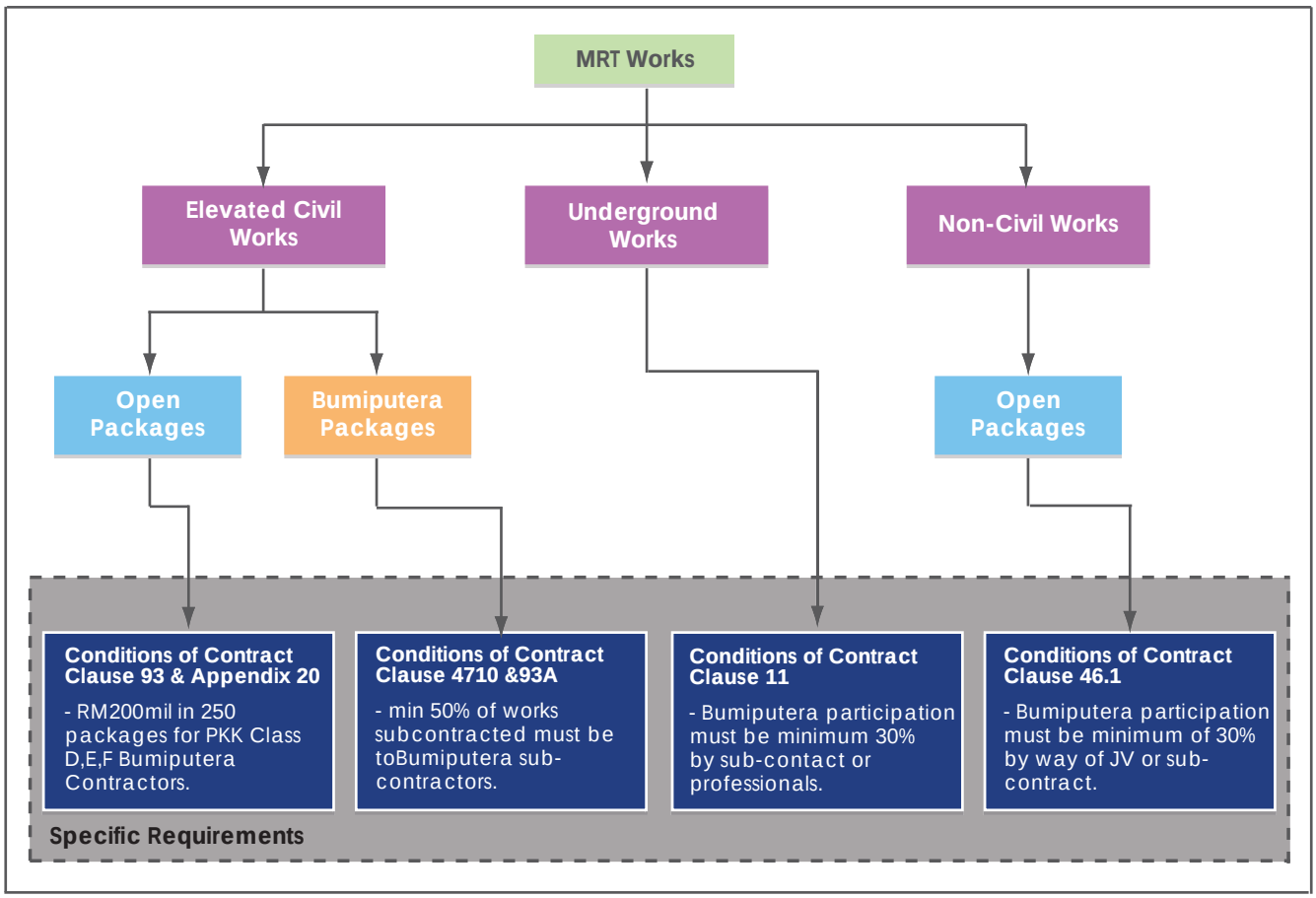
- International tendering is only allowed when goods and services are not available locally or local companies do not have the necessary expertise and capacity and a joint-venture is not possible, and in most cases, foreign suppliers require a local partner or intermediary to be permitted to tender.
- In tenders open to international participation, domestic tenderers benefit from preferential treatment. International tenderers are required to provide a tender deposit whereas local companies are exempted. Performance bonds are required over a certain threshold and must be obtained from domestic financial institutions.
- All individuals, companies or corporate bodies intending to participate in government procurement of works, supplies and services are required to be registered with the Ministry of Finance (MOF). Foreign companies must establish a local subsidiary company in order to register with MOF and to be eligible to participate, except for branch offices of consultancy firms.

102 MRT Corporation (n.d.)

Bumiputera Participation

In large transport infrastructure projects, participation from Bumiputera companies is often supported and encouraged by the government. This is an issue that has been raised and hotly debated by many industry players themselves. It is not uncommon for foreign firms to look for Bumiputera equity partners to participate in such large transport infrastructure projects in Malaysia.

Figure 13: Specific Requirement in Conditions of Contracts for Bumiputera Agenda in KVMRT Work Packages [103]



This is being implemented in the KVMRT project, dubbed as the largest public transport infrastructure project to date. Under the government's Bumiputera Agenda, the government has set a target for 43 percent of the value of all contracts for the MRT Sungai Buloh-Kajang Line to be awarded to Bumiputera companies. The target also covers the participation of CIDB Grade G1, G2, G3 and G4 Bumiputera contractors.

For the development of MRT Line 1, MRT Corp has set a target of 43 percent of Bumiputera companies' participation. The 43 percent consists of 42 percent for main work packages and 1.3 percent for D, E and F Bumiputera sub-contractors. Reportedly, the project achieved 50 percent work packages awarded to Bumiputera for main works packages – more than its set targets.[104]

103 MRT Corporation (n.d.)
104 Ibid.

5.3. Looming Talents Shortage

With the growing market and competition in the sector, more and more companies are setting their footprints in Malaysia while they are eyeing greater opportunities in the market. The Malaysian transport and infrastructure sector is booming and at the moment there are not enough people with the right skills in the market to cater to this growing demand. It is said that the sector is facing a looming talent shortage in the country especially in specialized technical areas. This shortage in talents is driven significantly by brain drain. In Malaysia, brain drain has long been a contentious issue and a subject of intense controversy.

According to sources, most skilled professionals in the country are migrating to countries with high standard of living, particularly across the causeway to Singapore. The brain drain phenomenon is primarily pushed by economic reasons. In the recent years, Malaysia has seen an increasing trend of local talents fleeing the country for better career opportunities. Reportedly, the current economic and political situation as well as currency devaluation further motivate Malaysian talents to leave for overseas jobs.

The Malaysian government has indeed realized the lack of talents in Malaysia due to braindrain. In 2011, Malaysia set up Talent Corporation, an agency to address the dearth in talent, and to lure Malaysians overseas to return to meet the manpower needs. In the last five years, TalentCorp managed to attract a dismal 3,600 professionals and skilled workers back to the country. Its task is getting tougher with the current economic and political situation.[105]

Foreign industry players cited that talents shortage in Malaysia may hinder the effective operation of their departments and businesses. Despite the increasing trends to localize the workforce nationwide, employers are often left to consider employing or sponsoring a qualified overseas or expatriate candidate in skill-short areas. This further highlights the need for industry players to continue innovating to attract candidates in a tight labor market to produce the highly-skilled local professionals that industry players need.

105 Asean Today (2016, March 18)

5.4. Other Issues and Challenges

Some industry players in the transport and infrastructure sector have cited that fulfilling the lead time and track records in serving the ASEAN region may pose a challenge to European players looking into entering the market in Malaysia. Therefore, it is advisable that European players understand the market and know the right and relevant personnel or agencies that can assist them in their market entry.

European companies can have high variability of lead time due to logistical or bureaucratic issues. It is said that being able to fulfill a fast lead time is a way of gaining market share and increasing profitability in the Malaysian market. Malaysian industry players can be demanding in terms of lead time – such that they prefer to work with companies that can ensure the fastest lead time. For some European players, having to import some of their products into Malaysia from Europe may take a longer time. This in turn poses a major drawback to European players.

On top of that, a good track record of delivering European products and services in the region will give European players a competitive advantage. Track record can be a crucial criteria when venturing into the Malaysian market as it is a rather competitive sector. Therefore, it is important that European players build their reputations to compete with other international as well as local players in the Malaysian transport and infrastructure sector, prior to entering the market.

POTENTIALS FOR
EU-HIGH TECH SOLUTIONS
PROVIDERS

06

6. Potentials for EU-High Tech Solutions Providers

6.1. Specialized High-Technology

The Malaysian transport and infrastructure sector is increasingly heading towards a higher focus on high quality products and services. This especially applies for niche projects. As the government is now gradually shifting the focus to high-quality and reliable technology rather than choosing the cheapest options in the market, this further gives European players a competitive advantage in the sector. European products and services are well-known for its quality, reliability and proven experience. Despite increasing competition coming from China, European players are still leading the high-end niche market here in Malaysia. There still exists a niche market in specialized high-technology in the Malaysian transport and infrastructure sector where no other players in the market can or is competent enough to supply such products or services.

However, it can be a challenge to penetrate this quality-sensitive sector as proven long track record of industry experience may be preferred, over other criteria. Collaboration with local companies would be one way of penetrating the market – this is because local companies possess relevant knowledge on the specifications, characteristics, as well as the state of the sector and market. It is also very important that European service providers highlight the differences in their products and services compared to the already existing ones in the local market. The benefits of these products and services should be clearly pointed out and communicated to the potential customers.

European companies can take advantage of the many gaps between supply and demand on high-end niche technologies in the Malaysian transport and infrastructure market, as well as Malaysia's increasing appreciation for high-quality services and products, as developers gradually become less cost-sensitive in certain niche areas.

6.1.1. Green and Smart Technology

Similar to the global aspiration, the local inclination in the transport and infrastructure sector is towards a transport infrastructure system that is energy efficient, environment-friendly, inter-operable, and one that offers speed, safety and comfort. Green Technology Policy introduced in Malaysia is a driver to accelerate the national economy and promote sustainable development. Green technology is expected to further contribute to a better fuel-economy and lower greenhouse emissions. Although the implementation of green initiatives in Malaysia is still at an infancy stage, the government is continuously promoting and developing its agenda.

There has been a move towards green architecture, building materials and infrastructure sustainability in Malaysia, albeit at a modest pace. Furthermore, in 2009, the Green Building Index (GBI) was established and the government has also taken necessary measures to encourage the development and adoption of green building technology which includes the Green Technology Financing Scheme (GTFS). Several incentives such as tax deductions and stamp duty exemptions have also been introduced by the Malaysian government. The Ministry of Energy, Water and Green Technology (KETTHA) has also spearheaded several retro-fitting projects for government buildings and townships.

Furthermore, in the field of electric vehicles, Malaysia is gradually gaining momentum – as part of the government efforts to continue to raise awareness on going green in the country. In 2014, KL Electric A-gogo, an electric vehicle sharing service was introduced, after the signing of a MoU between the Kuala Lumpur City Council and KL Electric Mobility. Under the MoU, a total of RM1.5 billion will be invested over a period of two years, to install 3,000 charging stations for electric vehicles at various strategic locations. Reportedly, Kl Electric Mobility is partnering with a French-based Bollore Bluecar company to bring French-brand electric car known as Autolib.[106] Additionally, in 2015, a MoU was signed between GreenTech Malaysia and The New Motion in Kuala Lumpur, as GreenTech Malaysia plans to install 300 charging stations called ChargEV by 2016.[107] This shows that Malaysia is indeed progressively adopting green and smart technology, and potential in this field is can be further explored.

Despite endemic market access barriers as has been discussed in the previous chapter, the GKL/KV area is very open to international business, particularly in the areas of green and smart technology, where technology advantage is scarce. This can be regarded as both an opportunity and a challenge, as it brings a lot of competition to the table. There is likely to be a local preference for any smart solutions and technology, but both parties are needed to solve problems and use technology to deliver real world solutions and more effective city services.

Foreign participation is encouraged in areas where local expertise may be scarce, such as technologies in green building, smart building and energy-efficient building, while market demand in this area gradually picks up. In the areas of scarce expertise, the largest private developers in the country, usually prefer foreign players, as they recognize that quality contracting supersedes pricing. The current preference is still towards the more established foreign companies and this is where European players have an edge.

6.2. Opportunities for Collaborations

Government involvement is high in transport and infrastructure sector to reach smart goals and initiatives – although many smart city initiatives in Malaysia have yet started and show little opportunity for European companies. Nevertheless, the transport and infrastructure of the GKL/KV area is said to be further enhanced via government initiatives, on multiple levels, and is expected to open up greater possibilities for collaborations with European players in all smart fields in the transport and infrastructure sector.

106 Greentechlead (2014)
107 The Malaysian Reserve (2015, September 11)

6.2.1. Knowledge and Expertise Transfer

European players not only can provide expertise in high-technology and design, but also in areas such as consultancy services, project management, and feasibility studies, among others – contributing to a transparent and efficient procurement strategy and the development of world class infrastructure in the country. With Malaysia now struggling to retain its skilled talents in the transport and infrastructure sector, particularly in the rail sector where demand is growing, knowledge and expertise transfer from foreign industry players are very much encouraged and promoted by the government.

Reportedly, Malaysia is in the midst of Building Information Modelling (BIM) adoption as a developing country. BIM implementation is targeted towards BIM Stage 2 by the year 2020 led by the Construction Industry Development Board, Malaysia (CIDB). Under the Construction Industry Master Plan 2016-2020 (CIMP: 2016-2020), it is hoped more emphasis on technology adoption across the project life-cycle will induce higher productivity. One of the key strategies of the CIMP: 2016-2020 is to ensure greater industry adoption on sustainable practices by focusing on high-impact public projects, which sets an example for the industry to follow. Reportedly, CIDB is currently working closely with authorities to drive compliance and environmental sustainability standards and to share best practices on key public projects such as the River of Life in KL, the MRT, Kuala Lumpur-Singapore HSR and Pan Borneo Highway construction.

The Malaysian government is planning to make BIM a mandate by 2019.[108] However, in the Malaysian context, technical (interoperability), process, cost, legal, human resource skills are identified as barriers and market demand to BIM adoption. There are two options of implementing BIM in Malaysia. The first option is to train the existing staff, while the second is to employ external expertise. Either way, this opens up an opportunity for European industry players in the market, for the fact that there is scarcity of BIM expertise in Malaysia.

Apart from that, in the sub-area of software in the transport and infrastructure sector, collaboration with foreign players is still very much needed to develop new capabilities and expertise, particularly in signaling and communication systems in the transport and infrastructure sector. It is said that the rail vehicle technology in particular has advanced and the industry that deals with this complex and sophisticated systems is a high-tech industry. As knowledge and expertise are still scarce, and with the rapid development of the rail sector in Malaysia, European service providers in the high-tech industry can further capitalize on the market opportunity in this area.

108 Stockhut (2015)

FUTURE PERSPECTIVES & RECOMMENDATIONS

07

7. Future Perspectives and Recommendations

The 2016 federal budget reinforces the Malaysian government's commitment to infrastructure development and supports ongoing developments plans such as the 11th Malaysia Plan and the Economic Transformation Programme. Despite the government reducing development expenditure by RM4.5 billion to RM5 billion under the recalibrated Budget 2016 due to further tumbling of oil prices, it is believed that the impact is not substantial on large-scale transport infrastructure projects such as MRT, LRT3, Pan-Borneo Highway, and Kuala Lumpur-Singapore HSR, as the projects still proceed.[109]

It is believed that real growth in Malaysia's transport infrastructure sector will continue to moderate over the coming years, driven mostly by rapid development in the rail sector. Furthermore, there are several rail projects ongoing and in discussion at the moment, which is expected to continue to strengthen growth in the sector. It is predicted that by the end of 11th Malaysia Plan period, the rail sector will see more refurbishment projects than new projects. Malaysia is also said to continue to enhance and upgrade its transport sector in order to serve the commuters better by developing a more integrated urban transport system in its major cities, as well as improving accessibility and convenience not only for the regular commuters but also for people with disabilities.

Nevertheless, public projects are expected to remain the bright spot in the sector, moving overall growth. The 11th Malaysia Plan, NKEA for UPT as well as National Land Public Transport Master Plan is viewed as crucial elements in driving the development of transport and infrastructure sector across the nation.

For EU service providers, entering the Malaysian market can be rather challenging as competition is intensifying and pricing is affected by the competitive structure of the market. The emerging trend however is heading towards a higher focus on high quality products and services. This especially applies for niche projects. Cooperation with local players therefore provide European companies with the relevant knowledge of the specificities of the market and is highly recommended. If the partnership with Malaysian companies is done successfully, European players can expect to gain more than just the Malaysian market, as there has been an increase in the number of Malaysian companies thriving abroad especially within ASEAN as well as in other foreign markets such as Africa and the Orients.[110] European players also have to be able to adjust themselves and make future plans in advance and implement an adjusted risk management due to market data in Malaysia being unreliable and difficult to interpret. Accordingly, it is advisable for European companies to have the support of the EU-Malaysia Chamber of Commerce and Industry and other bilateral chambers to help with their market entry strategies.

109 The Edge Markets (2016, February 2)
110 The Star Online (2015, March 11)

SWOT ANALYSIS

08

8. SWOT Analysis

Strength	Weakness
• European products and services have a very good reputation, ample experienced and successful track record • Europeans are leading the innovative, specialized high-technology market in the sector • EU players have high measure of knowledge and expertise in the sector • EU players have large number of experts and talents • Policy continuity and stable overall investment framework for foreign plaayers	• European products and services are usually high-priced compared to the ones offered by the local and competitors from other Asian countries • Exchange rate of Euro is high compared to Malaysian Ringgit • European companies need the financial capability for a long term approach • Lead time issues • Bias towards domestic players in the sector
Opportunities	**Threats**
• Increasing preference for products and services with high quality and safety standards in the local market • Niche areas of specialized high-technology • Increasing environmental awareness and initiatives by the government • Significant investment in transport infrastructure investment by the government • Talent drain in certain areas forces Malaysia to encourage knowledge and expertise transfer from foreign players • Rapid development in the rail sector that requires advanced technology and skills • Building Information Modelling and other IT-focused solutions/systems • Malaysia market access offers partnerships with Malaysian players in ASEAN and other regions	• Growing competition from China, pushing the prices down • Unreliable market data and difficulty to understand and evaluate the market • Lack of transparency and coordination issues among government agencies • Political uncertainty • High competition and relatively high price sensitivity

APPENDIX A
Regulatory Agencies & Related Associations

Regulatory Agencies and Related Associations

Economic Planning Unit (EPU)

Jabatan Perdana Menteri Blok B5 & Blok B6 Pusat Pentadbiran Kerajaan Persekutuan 62502 Putrajaya	**Tel :** 03-8000 8000 **Fax :** 03-8888 3755 **Website:** http://www.epu.gov.my

General Information:

The Economic Planning Unit is the principal government agency responsible for the preparation of development plans for the nation. It was established in 1961 to serve as the Secretariat for the preparation of the development plans, both the medium and long-term plans, for Malaysia. It has been mandated to be responsible to formulate the outline perspective plan and the five-year development plans for the nation. It is also the central planning agency responsible for approving programmes and projects as well as determining the allocation ceiling for national development. This task has remained basically unchanged since its establishment, with the addition of new tasks and responsibilities like privatization, the Foreign Investment Committee and other new areas.

Functions of the EPU:

- Planning
  - Socio-economic research and analysis
  - Policy development
  - Macro-economic modelling and framework
  - Plan development
- Resource Allocation
  - Budget Management and Project evaluation
- Monitoring
  - National program monitoring
  - Initiative monitoring
  - Project Monitoring
- Stakeholder Facilitation
  - Secretariat: Economic Council (EC) and National Development Planning Committee (JPPN)
  - Feedback Management

Meanwhile, in the transport and infrastructure sector, the objectives of the EPU include the following:

- Plan, evaluate and review policies related to roads, rails, airports, harbors, and utilities that complement other sectors to maintain gross economic growth
- Ensuring sufficient, efficient, cost effectiveness, and competitiveness of transportation, communication, and utilities services

- Ensuring sufficient allocations is made available in line with sector's priority and determining that relevant agencies have the expertise and capabilities to implement the development programmes
- Control and coordinate plans/projects implementations to ensure implementation and completion are as planned

Additionally, its key functions in the transport and infrastructure sector are:

- Formulate policies, strategies, plans and programmes related to infrastructures and utilities developments including roads, bridges, buildings, cities transportation, rails, harbors, airlines, water supply and sewerage
- Formulate criteria to evaluate infrastructure and utilities projects for feasibilities and implementations;
- Prepare ceiling allocations and evaluate infrastructure and utilities projects for feasibilities and implementations
- Prepare infrastructure and utilities projects listing for budget and foreign technical aids
- Prepare Five-Years Plan/ Five-Years Rolling Plan/Long-Term Plans/Policies Statements
- Examining annual budget forecast, scope variations, prepares variation notices for infrastructures and utilities projects
- Prepare working papers/memorandum to National Planning and Development Committee (JPPN), Economic Council, Cabinet, and agencies making summaries on Cabinet Memorandum Papers
- Supervise and evaluate projects to be implemented through Deferred Payment Scheme (DPS) and direct negotiation
- Assist in the implementation of infrastructure and utilities projects
- Assist in performing special duties as directed from time to time

Construction Industry Development Board Malaysia (CIDB)

Level 10, Menara Dato' Onn, Putra World Trade Centre, No 45, Jalan Tun Ismail 50480 Kuala Lumpur	**Tel :** 03-4047 7000 **Fax :** 03-4047 7000 **Website:** http://www.cidb.gov.my

General Information:

The CIDB is set up under the Lembaga Pembangunan Industri Pembinaan Malaysia Akta 1994 (Translation: Malaysian Construction Industry Development Board Act 1994) in July 1994 and functions as a specialized institution for advisory and making recommendations to the Federal and State Government on matters connected with the construction industry. The Act helps to

promote, stimulate and undertake research into any matter and promotes, stimulates and assists in the export of services relating to construction industry. CIDB provides consultancy and advisory services, aids in promoting quality assurance, encouraging the standardization and improvement of construction techniques and materials. Training programs organized by public and private construction training centers are supported. For accreditation purposes and recognition, the CIDB acts to accredit and register contractors and to cancel, suspend or reinstate the registration of any registered contractor. Contractors need to be aware of accreditation of all skilled construction workers and supervisors.

Among areas of priority, CIDB has trained a pool of over 70 accredited mediators for resolving disputes regarding serious delays in payment and payment defaults. Mediation is still in its infancy in Malaysia. The MOW is responsible for the construction industry. CIDB under the MOW, is tasked with promoting the construction services sector, as well as take on the role of coordinating and monitoring the overall progress of the implementation process of the Construction Industry Master Plan (CIMP). All construction companies must be registered with the CIDB and they regulate and register contractors from 7 grades (G1-G7).

CIDB works as the regulator for all local and foreign contractors in Malaysia. Therefore every contractor has to register at CIDB to be able to take on projects. Moreover, the government has empowered CIDB to collect a levy from all contractors. This is defined in Part VIII of ACT 520, which states that on all construction works with a value of equal and above RM 500,000 per contract, CIDB imposes a levy of 0.125% of the total contract sum. In 2014, the earnings via this levy were estimated around RM 171 million. The levy is used to promote the development of the construction industry and the export of products of the construction industry. In March 2015, CIDB had around 66,000 signed contractors. Out of the overall sum of contractors only 4,000 to 5,000 are large contractors with an employee range from 20 to 500. Hence, the majority are small and medium-sized companies with an equal share of around 50%. Regarding the international positioning of the contractor companies, only 30 out of the 66,000 are actively working on global markets, which bring up the very low quota of 0.045 percentages. There are around 115 companies involved in international projects.

Express Rail Link Sdn Bhd (ERLSB)

Level 2, KL City Air Terminal, KL Sentral Station, 50470 Kuala Lumpur	**Tel :** 03-2267 8000 **Website:** https://www.kliaekspres.com

General Information:

The Express Rail Link Sdn Bhd is a joint-venture company between YTL Corporation Berhad, Lembaga Tabung Haji, SIPP Rail Sdn Bhd and Trisilco Equity Sdn Bhd – with each holding 45 percent, 36 percent, 10 percent and 9 percent of shares respectively.

On 25 August 1997, the Malaysian government presented the company with a 30-year concession to finance, design, construct, operate and maintain two different train services and other ancillary activities related to railway services. The two train services are:

- KLIA Ekspres, a daily high speed, non-stop air-rail that connects KLIA and KLIA2 with Kuala Lumpur Sentral (KL Sentral), which commenced operation on 14 April 2002. The train has a journey time of 28 minutes with 15-minute interval during peak hours and 20-minute interval during off-peak hours
- KLIA Transit, a commuter service that connects KLIA and KLIA2 with KL Sentral with stops at three intermediate stations: Bandar Tasik Selatan, Putrajaya/Cyberjaya and Salak Tinggi; which commenced operation on 1 June 2012. The train has a total journey time of 35 minutes with 30-minute interval

ERLSB also carrys out other ancillary activities such as retail space provisioning at KL CAT and advertising spaces on the trains as well as the InfoScreen.

In 1999, ERL Maintenance Support Sdn Bhd (E-MAS) was established as a subsidiary of ERLSB, which is mainly responsible for the operations and maintenance of trains owned by ERLSB. The company was initially a joint-venture between ERLSB and Siemens AG, but since June 2005 it has been wholly-owned by ERLSB.

Keretapi Tanah Melayu Berhad (KTMB)

KTM Berhad, Corporate Headquarters, Jalan Sultan Hishamuddin, 50621 Kuala Lumpur	**Tel :** 03-2267 1200 **Website:** http://www.ktmb.com.my

General Information:

The Keretapi Tanah Melayu Berhad is the main rail operator in Peninsular Malaysia. The railway system dates back to the British colonial era, when it was first built to transport tin. It was previously known as the Federated Malay States Railways (FMSR) and the Malayan Railway Administration (MRA). It acquired its current name in 1962. Upon the establishment of RAC in 1992, Keretapi Tanah Melayu (KTM) was disband and officially known as Keretapi Tanah Melayu Berhad (KTMB). The organization was corporatized in 1992, but remains wholly-owned by the Malaysian government via the Ministry of Finance, Malaysia (MOF).

KTMB is the main intercity passenger train operator. It operates KTM intercity passenger trains on both main lines and Bukit Mertajam-Butterworth branch. It operates four day-time express trains, namely: Ekspres Sinaran, Ekspres Rakyat, Ekspres Kenali and Ekspres Tebrau; as well as four night-time express trains, namely: Senandung Malam, Senandung Langkawi, Ekspres Wau and Ekspres Timuran.

Land Public Transport Commission (SPAD)

Block D, Platinum Sentral, Jalan Stesen Sentral 2, Kuala Lumpur Sentral, 50470 Kuala Lumpur	**Tel :** 1-800 88 7723 **Website:** http://www.spad.gov.my

The Land Public Transport Commission, Malaysia (Malay: Suruhanjaya Pengangkutan Awam Darat) was officially established on 3 June 2010 following the passing of the Suruhanjaya Pengangkutan Awam Darat Act 2010 by the Parliament in May 2010. SPAD gained its full powers on 31 January 2011 with the gazetting of the Land Public Transport Act 2010.

SPAD, which comes directly under the purview of the Prime Minister, brings the functions of drawing up policies, planning and regulating all aspects of train, bus and taxi services as well as road- and rail-based freight transport under one commission. SPAD also carrys out various key activities, including building up its capacity as an organization and setting up the necessary infrastructure in preparation for full operations. SPAD enforcement officers work hand-in-hand with enforcement officers from other agencies such as the Road Transport Department and the Royal Malaysian Police. Duties of SPAD enforcement officers include:

- Inspection of public transport and freight vehicles
- Inspection of drivers, conductors and co-drivers
- Inspection of travel tickets and the clamping down on touting and soliciting

SPAD plays a central role in improving road and rail-based public and freight transport in Malaysia. The Land Public Transport Act 2010 states that SPAD shall propose policies and plans in relation to or affecting land public transport, and develop strategies in line with the approved policies and plans with a view to achieve a safe, reliable, efficient, responsive, accessible, planned, integrated as well as sustainable land public transport; while ensuring the provision of affordable services for the carriage of passengers and competitive services for the carriage of goods. Improving public transport is in line with one of the National Key Results Areas in the Government Transformation Plan initiated in 2009.

With the enforcement of the Land Public Transport Act 2010, SPAD will take over the functions of Commercial Vehicles Licensing Board, Department of Railways and the tourism vehicles licensing function of the Ministry of Tourism in Peninsula Malaysia. On the other hand, at present, the Commercial Vehicles Licensing Board, Department of Railways and the Ministry of Tourism continue to exercise their respective powers in Sabah and Sarawak.

In September 2012, SPAD released the National Public Land Transport Master Plan (NPLTMP). It is a 20-year master plan, aimed to improve land transportation at both, the national and regional levels. The strategic objectives outlined in the master plan are as follows:

- Physical connectivity to encourage the use of public transport
- Affordability and accessibility so that public transport is available to all walks of life
- High service level, quality and convenience to meet the public's expectations of service, reliability and all-round user-friendliness
- Safety and security so that the public can be assured of their personal safety while using public transport
- Better quality of life by aspiring towards a clean and green environment

Ministry of Transport (MOT)

No. 26, Jalan Tun Hussein, Presint 4, 62100 W.P. Putrajaya	**Tel :** 03-8000 8000 **Fax:** 03-8888 0158 **Website:** http://www.mot.gov.my

General Information:

The Ministry of Transport, Malaysia (Malay: Kementerian Pengangkutan), established since 1956, is responsible for the formulation and implementation of policies, strategies and programs for public transportation which covers land, aviation and maritime sectors. The MOT was renamed the Ministry of Communications in 1972 and in 1974.It was again renamed Ministry of Transport and Works. In 1976, the ministry's name was reverted to the Ministry of Communications. In 1978, it was renamed the Ministry of Transport, which remains until today. Departments under the MOT include Road Transport Department, Civil Aviation Department, Railways Department, Marine Department, Road Safety Department. Statutory bodies under the ministry include Railway Assets Corporation, Port Klang Authority, Bintulu Port Authority, Johor Port Authority, Kemaman Port Authority, Kuantan Port Authority and Penang Port Commission, Maritime Institute of Malaysia (MIMA) as well as Malaysian Institute of Road Safety Research (MIROS).

The are 14 divisions within the ministry namely: Administration and Finance Division, Account Division, Development Division, Aviation Division, Maritime Division, Land and Logistic Division, Strategic Planning and International Division, Human Resource Management Division, Information Management Division, Internal Audit Unit, Corporate Communication Unit, Integrity Unit, Legal Advisory Unit as well as Air Accident Investigation Bureau.

Functions of the MOT:

- Planning, formulating and implementing policies for rail transport, maritime, ports and civil aviation
- Execute rail infrastructure projects, maritime, ports and civil aviation
- Coordinate the integration of transport modes to achieve seamless travel
- Provide licensing services for:
  - License / operation permit service providers and the concession holder (except commercial vehicles)
  - Individual license – private vehicle driver / commercial, pilot, navigator and others
  - Domestic shipping license
- Registration of all vehicles modes
- Determine the pricing policy (except for commercial vehicles)
- Regulating the policies and operations of the concessionaire holder / government company
- Regulate the standards of service, security, (service and safety standards) and legislation
- Implement regional and international cooperation in the field of transportation

Ministry of Works (MOW)

Block B, 6th Floor, Kompleks Kerja Raya, Jalan Sultan Salahuddin, 50580 Kuala Lumpur	**Tel :** 03-8000 8000 **Fax :** 03-2711 1101 **Website:** http://www.kkr.gov.my

General Information:

The Ministry of Works (Malay: Kementerian Kerja Raya) was established in 1956 as the Ministry of Works, Post and Telecom. In 1975, the Ministry was restructured and renamed the Ministry of Works and Transportation. The rapid growth and socio-economic development in the country during 1970s has added to the responsibilities of the ministry. Thus, the ministry was again renamed the Ministry of Works and Public in 1978. In accordance with its specialized responsibilities in the 1980s, the government renamed the ministry to the Ministry of Works. The Ministry's objective is to develop and enhance a high quality infrastructure system, the construction industry and services. It is responsible for public works, highway authority, construction industry, engineers, architects and quantity surveyors.

Functions of the MOW:

- To plan the development of the Federal road networks nationwide
- To coordinate and monitor the implementation of the Federal road projects and other projects under the supervision of MOW
- To regulate the privatized maintenance work of Federal roads
- The development of Bumiputera entrepreneurs in the construction sector
- To monitor the construction, operation, toll handling and maintenance of the tolled expressways

- To plan and coordinate human resource and financial (administration and development) of MOW and Public Works Department
- To monitor departments and agencies under its purview
- To monitor the implementation of the development projects of the Client Ministries carried out by Public Works Department
- To give advice and support services to Construction Industry Development Board (CIDB) in the development of the country's construction industry and skilled workforce
- To give advice and support services to Malaysian Highway Authority (MHA), Board of Engineers Malaysia (BEM), Board of Architects Malaysia (BAM) and Board of Quantity Surveyors Malaysia (BQSM) in the development of the professional services programs for the domestic and international market

MRT Corporation Sdn Bhd

Mass Rapid Transit Corporation Headquarters Tingkat 5, Menara I & P1, 46 Jalan Dungun, Bukit Damansara, 50490, Kuala Lumpur	**Tel :** 03-2095 3030 / 03-20813000 **Fax:** 03-2095 2121 **Website:** http://www.mymrt.com.my

General Information:

Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) is fully owned by the Minister of Finance Incorporated and was set up to be the developer and asset owner of the Mass Rapid Transit project. The company was set up in September 2011 and took over the ownership of the project in October 2011 from Prasarana Malaysia Berhad.

MRT Corp's responsibilities include monitoring and tracking of construction of all elevated structures, stations and depots of the MRT project. It also monitors underground works, which involves tunneling and construction of underground stations. MRT Corp is also responsible for the contracts involved, the procurement process and dispute resolution, apart from ensuring the quality of delivery in terms of cost, scheduling and health, safety, security and environment requirements.

MRT Corp works hand-in-hand with other parties in the development of the project, which are MMC-Gamuda KVMRT (PDP) Sdn Bhd as its Project Delivery Partner, and the Suruhanjaya Pengangkutan Awam Darat as supervising agency.

MyHSR Corporation Sdn Bhd

Level 9, Block A, Platinum Sentral Jalan Stesen Sentral 2, Kuala Lumpur Sentral 50470, Kuala Lumpur	**Tel :** 03-2718 4345 **Website:** http://www.myhsr.com.my

General Information:

MyHSR Corporation, established recently in 2015, is a company responsible for the development and promotion of the HSR project. Incorporated as a company wholly-owned by the Ministry of Finance. MyHSR Corporation is the project delivery vehicle accountable for the definition of the technical and commercial aspects of the Kuala Lumpur – Singapore HSR project.

MyHSR is tasked to ensure that the Kuala Lumpur – Singapore HSR is:

- Planned, designed and built to the highest standards of safety specifications, to ensure a comfortable and seamless travel experience between Kuala Lumpur and Singapore
- Integrated into the development of the local transport hubs to facilitate accessibility
- Fully leveraged to further catalyze socio-economic development along the southern corridor

Prasarana Malaysia Berhad (Prasarana)

B-20-1, Level 20, Menara UOA Bangsar, No. 5, Jalan Bangsar Utama 1, 59000 Kuala Lumpur	**Tel :** 03-2299 1999 /03- 2287 5959 **Fax:** 03-2299 1919 **Website:** www.myrapid.com.my

General Information:

Prasarana Malaysia Berhad, established in 1998 and operated since 2002, was formerly known as Syarikat Prasarana Negara Berhad. It acquired its current name in July 2014. Headquartered in Kuala Lumpur, Prasarana is wholly-owned by the Ministry of Finance, Malaysia (MOF). It is the asset owner and operator of Malaysia's LRT networks (Kelana Jaya Line and Ampang/Sri Petaling Line) and the KL Monorail; as well as the bus services of RapidKL, RapidPenang, RapidKuantan and RapidKamunting. RapidKl is the service brand used by Prasarana subsidiaries to refer to the public transportation service dedicated for Kuala Lumpur and Klang Valley regions.

Prasarana has established Prasarana Integrated Management and Engineering Services Sdn Bhd (PRIME) to provide management and engineering consultancy services, Prasarana Integrated Development Sdn Bhd (PRIDE) to undertake commercial and transit-oriented development projects to further strengthen the performance of the company and Prasarana Rail and Infrastructure Projects Sdn Bhd (PRAISE) to focus on major public transport infrastructure projects assigned to the Prasarana. Its other subsidiaries include Rapid Bus Sdn Bhd, which manages RapidKL, RapidPenang, RapidKuantan and RapidKamunting bus networks; and Rapid Rail Sdn Bhd, which operates stations along the Ampang LRT, Kelana Jaya LRT & KL Monorail network in Kuala Lumpur.

Railway Assets Corporation (RAC)

No 29G, Blok B, Jalan TKS1,
Kajang Sentral Business Park, 43000 Kajang,
Selangor Darul Ehsan

Tel : 03-8733 2020
Fax: 03-8733 2222 / 03-8733 6018
Website: http://www.rac.gov.my

General Information:

The Railway Assets Corporation is a federal statutory body under the MOT. RAC was established under the Railways Act 1991 (Act 463), commence officially as an organization on 1st August 1992 and was gazetted under Volume 36 No.16 on 30 July 1992. RAC was fully-operated on 1 October 1992. In conjunction with the establishment of RAC, Keretapi Tanah Melayu (KTM), a public entity which exists since 1894 was disband and officially known as Keretapi Tanah Melayu Berhad (KTMB). At the same time, the Department of Railway was formed to ensure and promote safe, efficient and affordable railway transport system in Malaysia. It is hoped that with the formation of RAC and Department of RailwayKTMB will concentrate to enhance the level and quality of railway services in the country and to rejuvenate their image.

With the corporatization of railway operations, the RAC holds the following responsibilities and roles:

- Responsible to the management of all assets and liabilities which is owned and liable by KTM and railway lands vested by Federal Lands Commissioner before 1 August 1992 to RAC
- To execute the development and redevelop the railway infrastructures
- To finance railway infrastructure development using sources gathered from various activities such as rental, lease and government allocation

Functions of the RAC as per Railway Act 1991 (Act 463):

- Section 89(8)
  - To manage, administer and maintain:
    - **i.** All property and rights of the Malayan Railway Administration under the repealed Ordinance which by virtue of Section 92, are vested in the Corporation;
    - **ii.** All property vested in, held or acquired by the Federal Lands Commissioner under the repealed Ordinance which by virtue of Section 93 are vested in the Corporation, and to manage and administer all liabilities in respect thereof
  - To undertake projects for the development or redevelopment of any railway infrastructure or facilities
  - To carry out and perform such other functions as may prescribed by the Minister under this Act

- Section 92(2)
  - All property, rights and liabilities of the Malayan Railway Administration under the repealed Ordinance shall, upon commencement of this Act, vest in the Corporation without any conveyance, assignment or transfer whatsoever and all references to "Malayan Railway Administration" or "General Manager, Malayan Railway" in relation to such property in any instrument, deed, title, document or written law shall be construed as if all such references were references made to RAC
- Section 93
  - All property vested in, held or acquired by the Federal Lands Commissioner under the repealed Ordinance shall vest in the Corporation under this Act without any conveyance, assignment or transfer whatsoever for the like title, estate or interest and on the like tenure as the same was vested or held immediately before the commencement of this Act and all references to the "Federal Land Commissioner", in relation to such property in any instrument, deed, title, document or written law shall be construed as if such references were references made to the RAC

Road Transport Department (RTD)

Kementerian Pengangkutan Malaysia Level 5, No. 26, Jalan Tun Hussein, Presint 4 Pusat Pentadbiran Kerajaan Persekutuan 62100 Putrajaya	**Tel :** 03-8000 8000 **Fax:** 03-8881 0194 **Website:** http://www.jpj.gov.my

General Information:

The Road Transport Department (Malay: Jabatan Pengangkutan Jalan) was established in 1937 under the Traffic Enactment 1937 of the British military law in the Federated Malay States. The administration was then known as the Road Transport Board, tasked with the regulating and licensing of public enterprises. With the establishment of the administration of Malaya in April 1946, the power of the board was taken over by the Office of the Registrar and Motor Vehicles Inspection which covered the whole of Malaya. Before 1937, the regulation of motorized vehicles covered only the four Federated Malay States of Lower Perak, Selangor, Negeri Sembilan and Pahang. The administration was not extended to the Unfederated Malay States, until Traffic Enactment 1937 was enforced. In line with the establishment of the department, a law called the road the Road Traffic Ordinance 1953 was approved to replace the Traffic Enactment 1937. Given the importance of the duties to enforce the law, especially for commercial vehicles, the Enforcement Division was set up to carry out the enforcement functions.

On 1 April 1946, the Road Transport Department was established with the aim to coordinate all aspects of transportation across the country. In connection with the establishment of this department, various related acts were enacted, such as the Road Transport Ordinance 1958

and the Road Transport Act 1987. This was intended to streamline the country's transportation laws as well as a platform for RTD responsibilities. Following significant improvements to the transportation system in country in the 1980s, RTD was increasingly burdened with multiple responsibilities to improve its service quality. Accordingly, the internal restructuring of the department was carried out to increase the efficiency to suit current needs and interest. Due to the diversity of functions in all parts of the department, various innovations have been implemented to improve the efficiency of the service. The 1990s showed the most promising progress because of the demands of the placed by the transportation system.

Today, the RTD is one of the departments under the Land Division, Ministry of Transport Malaysia. It is responsible for providing counter services for licensing of vehicles and drivers and the enforcement of the Road Transport Act 1987 to ensure safe drivers and safe vehicles. It is an organization that provides high quality services with the responsibility to manage and enforce the collection of revenue in a transparent and efficient manner. It consists of 10 divisions that have their respective functions, namely: Management Division, Corporate and Research Division, Finance Division, Information Technology Division, Enforcement Division, Licensing Division, Driver Licensing Division, Automotive Engineering Division, Integrity Division as well as Revenue Division.

The Master Builders Association Malaysia (MBAM)

No. 2, Jalan 2/109E, Desa Business Park, 58100 Kuala Lumpur	**Tel :** 03-7984 8636 **Fax:** 03-7982 6811 **Website:** http://mbam.org.my

General Information:

The Master Builders Association Malaysia was founded in 1954 by a group of Malaysian master builders. Now it is an umbrella organization, representing the Malaysian construction industry and services sector. The objective is to promote and develop the construction industry. Therefore MBAM fulfills several functions. On a regular basis it organizes trainings, seminars and exhibitions, which are all related to topics of the construction industry. One of these is the Site Safety Supervisor Course (SSS). It is also very much devoted to education and founded a scholarship in 1999 to support Malaysian citizens during their construction industry related studies at local universities. MBAM also publishes a monthly magazine. In order to be able to identify upcoming problems MBAM stays strongly connected to the market. Together with the government and other professional institutions they address and solve them together. MBAM also promotes collaboration on a basis of professionalism and harmonization. They created the Building Industry President's Council (BIPC), in which every 2 to 3 months various professionals of the construction industry meet to share their views and improve collaboration. In order to liberalize the market they also meet up with international bodies.

The focus of MBAM lies on the main contractors and SME with a turnover of not more than RM 20 million and a staff of not more than 50 employees. In March of 2015 there were around 5,400 members, which contribute up to 80 percent of the whole construction industry output of the country. To be able to become a member of MBAM, a company has to be a Sendirian Berhad (Translation: Private Limited) and need to be registered at CIDB. MBAM has 24 board members, who meet on a regular basis every five weeks. Only Malaysian citizens can be part of the council of MBAM. Foreign companies that would want to join MBAM will need to be represented by a local. The German construction and machinery manufacturing concern BAUER for example is part of the council.

MBAM is part of several organizations such as: International Federation of Asian and Western Pacific Contractors' Association (IFAWPCA), the ASEAN Constructor Federation (ACF), the Confederation of International Contractors' Associations (CICA) and the Memorandum of Understanding (MoU). MBAM offers 4 different classes of membership: Ordinary Members; Affiliate Members; Associate Members Honorary Members.

APPENDIX B
ADDITIONAL INFORMATION

Additional Information

Table 11: Population of Malaysia, 2014[111]

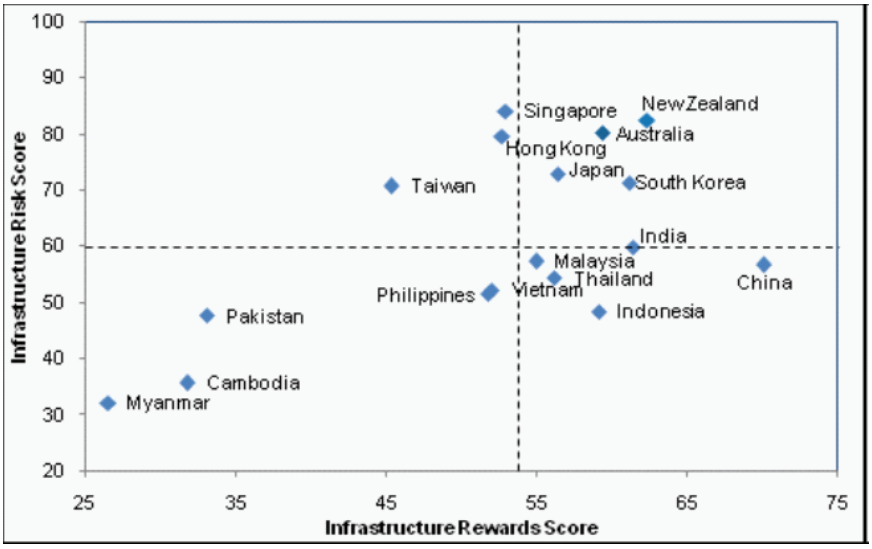
MALAYSIA	30,261,700
Peninsular Malaysia	24,088,300
Sabah	3,540,300
Sarawak	2,633,100
Urban Population	73.0
Area in Square Kilometers	330,396
Population Density/km^2	92

Table 12: Top 10 Attractive Countries for Long-Term Infrastructure Investment in APAC, 2012-2016[112]

APAC Ranking	Country	World Ranking by Year		
		2016	2014	2012
1	Singapore	1	1	1
2	**Malaysia**	**5**	**7**	**7**
3	Australia	11	9	9
4	Japan	12	15	16
5	China	17	17	18
6	Korea	20	21	20
7	Indonesia	21	23	26
8	India	23	23	25
9	Thailand	25	20	21
10	Philippines	28	29	32

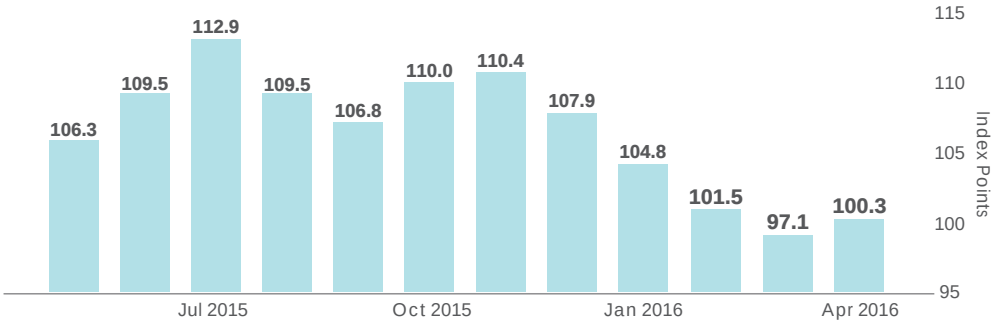
111 Department of Statistics, Malaysia (2010)
112 Arcadis (n.d.)

Figure 14: Asia Infrastructure Risk / Reward Index[113]



*Scores out of 100. Higher risk score indicates lower risk

Figure 15: Malaysia CPI Transportation[114]



113 BMI Research (2016)
114 Trading Economics (n.d.)

Table 13: Roads in Malaysia, 2014[115]

Type	Total Road Mileage (km), 2014*		
	Paved Road	Graveled Road	Dirt Road
Federal Road	19,714.22	0.0	0.0
State Road	134,979.44	32,806.46	16,284.90
Highway	1,998.22	0.0	0.0

*This does not include roads in Putrajaya

Figure 16: Number of Ships Arrival at Malaysia Ports, 2010-2014[116]

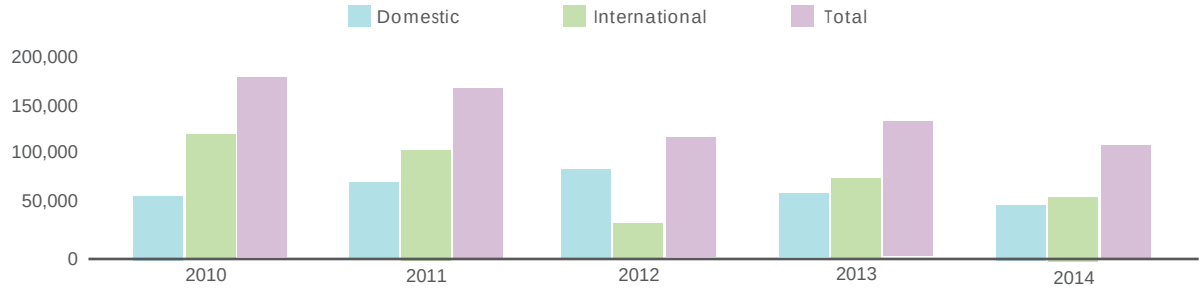
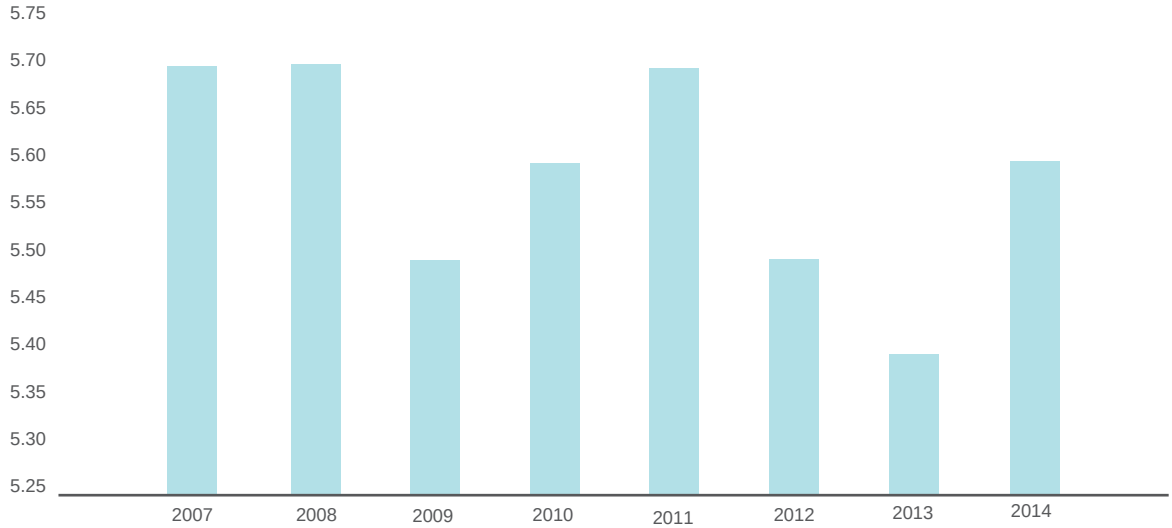


Figure 17: Quality of Port Infrastructure, Malaysia, 2007-2014[117]



*The Quality of Port Infrastructure measures business executives' perception of their country's port facilities. Data are from the World Economic Forum's Executive Opinion Survey. Data are collected online or through in-person interviews. Responses are aggregated using sector-weighted averaging. Scores range from 1 (port infrastructure considered extremely underdeveloped) to 7 (port infrastructure considered efficient by international standards). Respondents in landlocked countries were asked how accessible are port facilities (1 = extremely inaccessible; 7 = extremely accessible).

115 Ministry of Transport, Malaysia (2015)
116 Ministry of Transport, Malaysia (2015)
117 Worldbank Data (n.d.)

Table 14: Railways, Malaysia, 2014[118]

Total Railway Route Length	1,641.42 km
Double-Track Railway Route Length	773.70 km
Electrified Track Railway Route Length	773.70 km
Urban Railway Route Length	158.20 km

Table 15: Number of Passengers for Rail Services, Malaysia, 2011-2014[119]

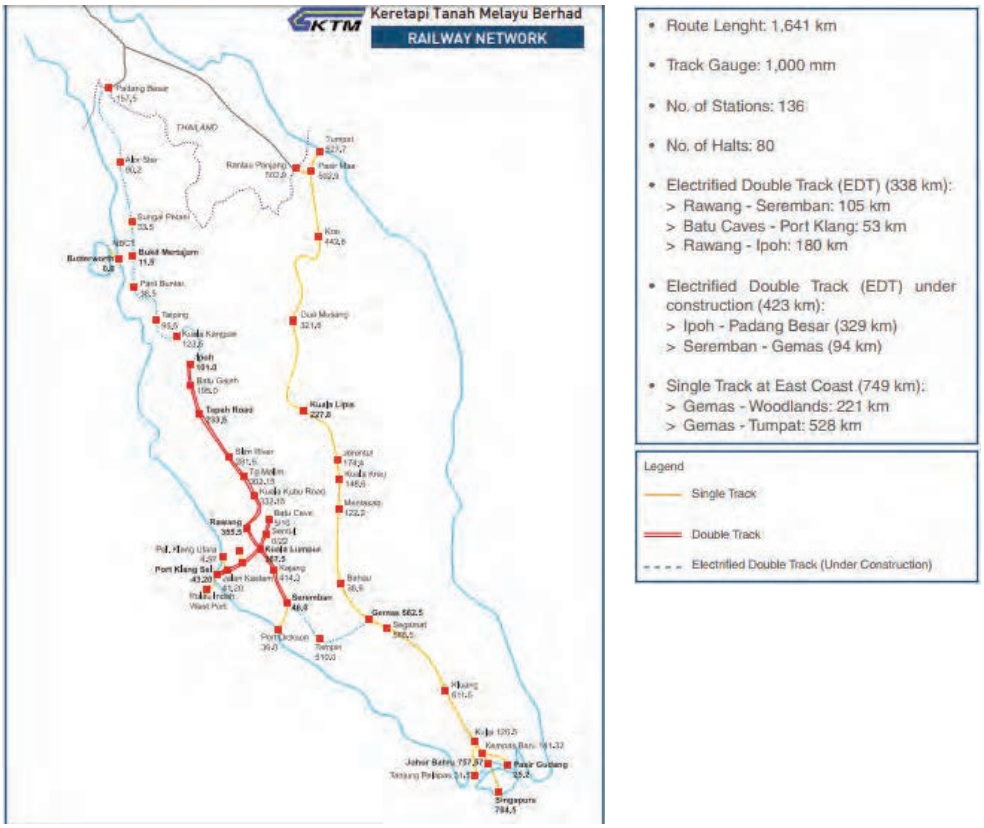
Rail Services	2011	2012	2013	2014
Kelana Jaya Line	68,398,561	71,574,675	78,702,931	81,971,322
Ampang Line	53,568,672	56,809,978	60,207,397	63,270,432
KL Monorail	24,200,299	24,113,242	25,437,621	24,303,465
KLIA Express	1,581,476	1,649,410	2,063,419	2,928,302
KLIA Transit	3,238,389	3,713,536	4,374,219	6,310,323
Komuter	35,510	34,847	43,942	46,957
KTMB	3,686	3,056	2,703	2,223

Table 16: Top 5 Busiest Airports by Total Aircraft Movements, Malaysia, 2012-2015[120]

Airport	2012	2013	2014	2015
KLIA	283,352	326,678	340,821	354,519
Kota Kinabalu	58,366	67,601	73,074	71,209
Penang	53,766	60,020	65,734	66,670
Kuching	46,727	56,085	53,490	53,303
Pulau Langkawi	33,056	29,309	28,694	30,853

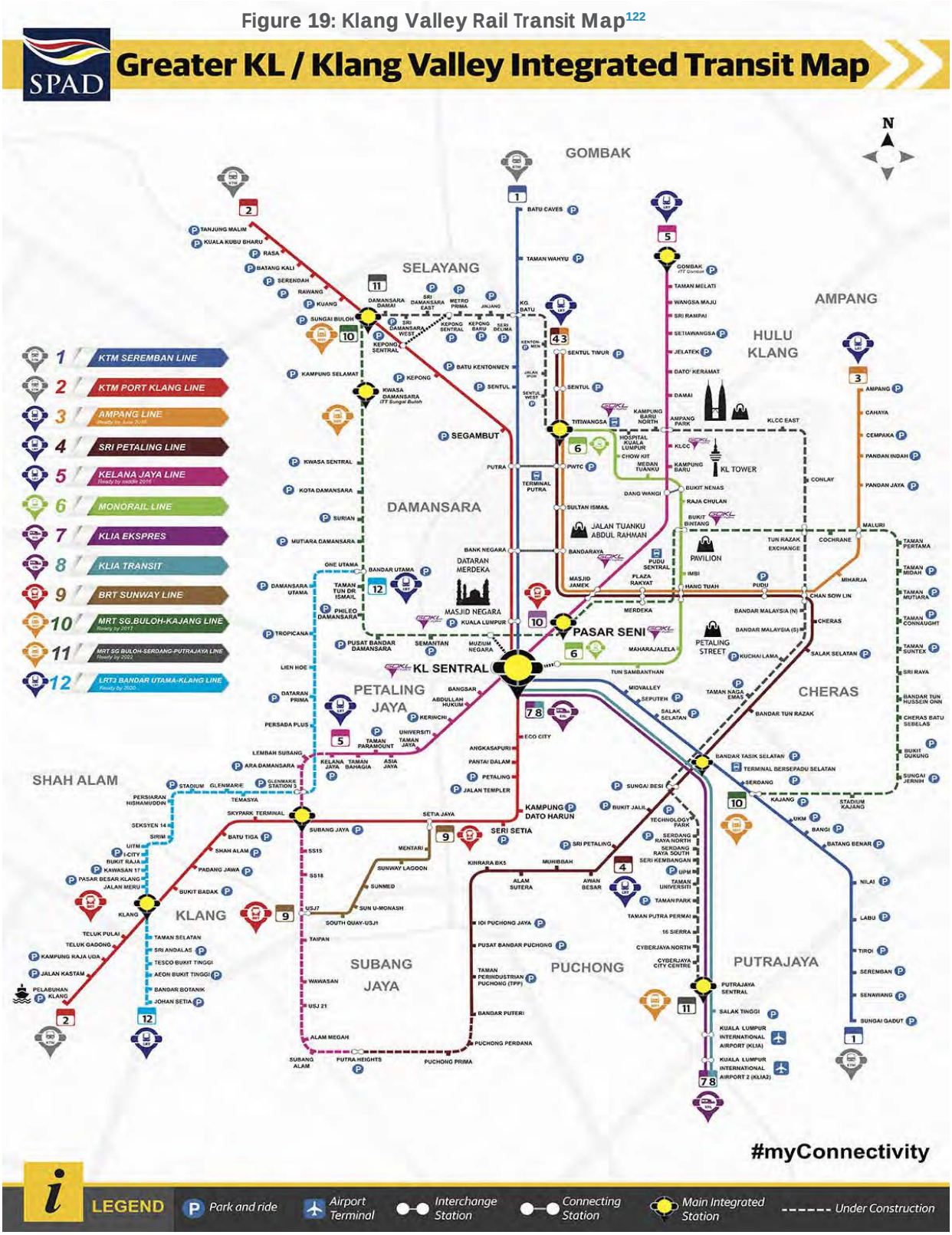
118 Ministry of Transport, Malaysia (2015)
119 Ministry of Transport, Malaysia (2015)
120 Malaysia Airports Holding Berhad (n.d.)

Figure 18: Rail Transport Network of Keretapi Tanah Melayu Berhad (KTMB)[121]



121 Ministry of Transport (n.d.)

Figure 19: Klang Valley Rail Transit Map[122]



122 Suruhanjaya Pengangkutan Awam Malaysia (SPAD) (2016)

References

Arcadis. Third Global Infrastructure Investment Index 2016 Bridging the Investment Gap (n.d.). Retrieved on June 10, 2016 from https://www.arcadis.com/media/7/8/5/%7B785B8C40-9A81-4E98-97B0-41CAB5E208C5%7DArcadis%20GIII%202016.pdf

Asean Today. Malaysia's Brain Drain Reaching Critical Stage (2016, March 18). Retrieved on June 10, 2016 from http://www.aseantoday.com/2016/03/malaysias-brain-drain/

Asean Today. And the Malaysia-Singapore High Speed Rail Project Goes to (2016, March 31). Retrieved on June 10, 2016 from https://www.aseantoday.com/2016/03/high-speed-rail-project-goes-to/

Bank Negara Malaysia (n.d.). Annual Report 2015 Executive Summary. Retrieved April 8, 2016, from http://www.bnm.gov.my/files/publication/ar/en/2015/cp00_003b_exec_summary.pdf

BMI Research. Malaysia Infrastructure Report Q2 2016 (2016, February). Accessed on April 8, 2016

Christopher & Lee Ong. Doing Business in Malaysia (2016, January). Retrieved on June 10, 2016 from http://www.christopherleeong.com/media/2612/clo-doing-business-in-malaysia-guide-november-2016.pdf

Daily Express. Iskandar Secures RM4b Investments (2016, March 1). Retrieved on April 8, 2016 from http://www.dailyexpress.com.my/news.cfm?NewsID=107185

Department of Statistics Malaysia (n.d.). Population Distribution and Basic Demographic Characteristic Report 2010 (Updated: 5/8/2011). Retrieved April 8, 2016, from https://www.statistics.gov.my/index.php?r=column%2FcthemeByCat&cat=117&bul_id=MDMxdHZjWTk1SjFzTzNkRXYzcVZjdz09&menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09

Department of Statistics, Malaysia (2010). Population and Housing. Retrieved on April 8, 2016 from http://web.archive.org/web/20141006072005/http://www.statistics.gov.my/portal/download_Stats_Malaysia/files/MMS/2010/BI/03_Population_and_Housing.pdf

Department of Statistics, Malaysia. Report on Survey of Construction Industries 2014 (2015, August 12). Retrieved on June 10, 2016 from https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=321&bul_id=N3AzSEJ3cWhOT2tvOUE5Rmk1blFaQT09&menu_id=OEY5SWtFSVVFVUpmUXEyaHppMVhEdz09

Department of Statistics, Malaysia (2016, February 18). Gross Domestic Product Fourth Quarter 2015. Retrieved April 8, 2016, from https://www.statistics.gov.my/index.php?r=column%2FcthemeByCat&cat=100&bul_id=QklmOEdsaXMra29vdHNjNFF1UFErdz09&menu_id=TE5CRUZCblh4ZTZMODZlbmk2aWRRQT09

Department of Statistics, Malaysia (2016, May 27). Salaries & Wages Survey Report, Malaysia, 2015. Retrieved January 5, 2017, from https://www.statistics.gov.my/index.php?r=column%2FcthemeByCat&cat=157&bul_id=czRyNkJlbDFyYXJFbU5YTVJ1V1BHZz09&menu_id=U3VPMldoYUxzVzFaYmNkWXZteGduZz09

Economic Planning Unit, Malaysia (n.d.). Eleventh Malaysia Plan 2016-2020. Retrieved on April 8, 2016 from http://rmk11.epu.gov.my/index.php/en/dokumen-rmke-11

Economic Planning Unit, Malaysia (n.d.). Providing Seamless Transport System. Retrieved on April 8, 2016 from http://rmk11.epu.gov.my/pdf/strategy-paper/Strategy%20Paper%2013.pdf

Economic Transformation Programme (n.d.). Overview of ETP. Accessed April 8, 2016 from http://etp.pemandu.gov.my/About_ETP-@-Overview_of_ETP.aspx

Economic Transformation Programme, Malaysia. Kuala Lumpur-Singapore High Speed Rail (n.d.). Retrieved on April 8, 2016 from http://etp.pemandu.gov.my/Greater_Kuala_Lumpur_Klang_Valley-@-Greater_Kuala_Lumpur_-_EPP_3-;_Connecting_to_Singapore_via_a_high_speed_rail_system.aspx

European Commission Directorate-General for Trade. (n.d.). Retrieved April 8, 2016, from http://madb.europa.eu/madb/statistical_form.htm

EU-ASEAN Relations - EUMCCI. (n.d.). Retrieved January 5, 2017, from http://www.eumcci.com/eu-asean-relations1

Financial Times. China Takes the Lead in Malaysian Mega-Projects (2016, March 9). Retrieved on April 10, 2016 from https://www.ft.com/content/1097a510-e5e4-11e5-a09b-1f8b0d268c39 (no longer accessible as on February 13, 2016)

Finanzen (n.d.). Euro in Malaysischer Ringgit Währungsrechner | EUR in MYR umrechnen. Retrieved January 5, 2017, from http://www.finanzen.net/waehrungsrechner/euro_malaysischer-ringgit

Finanzen (n.d.). Dollar in Malaysischer Ringgit Währungsrechner | USD in MYR umrechnen. Retrieved January 5, 2017, from http://www.finanzen.net/waehrungsrechner/us-dollar_malaysischer-ringgit

Gamuda Berhad. Project Delivery Partner (n.d.). Retrieved on April 8, 2016 from http://archive.gamuda.com.my/project_delivery.html

Gamuda Berhad. Mass Rapid Transit (n.d.). Retrieved on April 8, 2016 from http://gamuda.com.my/engineering-construction/mrt/

Germany Trade & Invest. Malaysias Metropole Penang rollt Transport-Masterplan aus (2014, December 12). Retrieved April 8, 2016 from http://www.gtai.de/GTAI/Navigation/DE/Trade/Maerkte/suche,t=malaysias-metropole-penang-rollt-transportmasterplan-aus,did=1133150.html?view=renderPrint

Greentechlead. A-gogo EV Car Sharing Program Announced in Kuala Lumpur City (2014, December 18). Retrieved on September 1, 2016 from http://www.greentechlead.com/electric-vehicle/gogo-ev-car-sharing-program-announced-kuala-lumpur-city-20525

Iskandar Malaysia. FAQ (n.d.). Retrieved on April 8, 2016 from http://iskandarmalaysia.com.my/faq/

Iskandar Regional Development Authority, Malaysia. About Us (n.d.). Retrieved on April 8, 2016 from http://www.irda.com.my/about-us/

Jala, I. (2016, May 18). The Measure of Poverty. Retrieved May 30, 2016, from http://etp.pemandu.gov.my/Transformation_Unplugged-@-The_measure_of_poverty.aspx

Jabatan Perdana Menteri. Economic Transformation Programme Annual Report 2014 (2015). Retrieved on April 8, 2016 from https://www.pemandu.gov.my/assets/publications/annual-reports/ETP_2014_EN.pdf

Kementerian Kerjaraya Malaysia. The Development of Public and Private Construction (n.d.). Retrieved on April 13, 2016 from http://epsmg.kkr.gov.my/images/2/22/QS0113_THE_DEVELOPMENT_OF_PUBLIC_AND_PRIVATE_CONSTRUCTION_PR.pdf (no longer accessible as on February 13, 2016)

Lebuhraya Borneo Utara. About Pan Borneo Highway Sarawak (n.d.). Retrieved on April 8, 2016 from http://www.panborneo.com.my/about-us/

Lembaga Lebuhraya Malaysia. Latar Belakang (n.d.). Retrieved on June 10, 2016 from http://www.llm.gov.my/corporate_info

Malaysia Airports Holding Berhad. Annual Report 2015 (n.d.). Retrieved on June 10, 2016 from http://ir.chartnexus.com/malaysiaairports/reports.php?type=ar&year=2014

Malaysia Human Development Report (n.d.). The NEP: Growth and Imbalances in Malaysia, 1970-2012. Retrieved April 8, 2016, from http://www.mhdr.my/files/editor_files//files/MHDR%202013%20Chapter%2003.pdf

MalaysiaKini (2015, October 23). Highlights of the 2015/2016 Economic Report. Retrieved April 8, 2016, from http://www.malaysiakini.com/news/316911

MATRADE (n.d.). Trade Performance: December 2015 and January - December 2015. Retrieved April 8, 2016, from http://www.matrade.gov.my/en/malaysia-exporters-section/235-trade-performance-2015/4518-trade-performance--december-2015-and-january-december-2015

MATRADE (n.d.). Top 10 Major Export Products, 2015. Retrieved April 8, 2016, from http://www.matrade.gov.my/en/malaysia-exporters-section/33-trade-statistics/3816-top-10-major-export-products-2015

MATRADE (n.d.). Top 10 Major Import Products, 2015. Retrieved April 8, 2016, from http://www.matrade.gov.my/en/malaysia-exporters-section/33-trade-statistics/3817-top-10-major-import-products-2015

MATRADE (n.d.). Top 10 Major Import Countries, 2015. Retrieved April 8, 2016, from http://www.matrade.gov.my/en/malaysia-exporters-section/33-trade-statistics/4574-top-10-major-import-countries-2015

MATRADE (n.d.). Top 10 Major Export Countries, 2015. Retrieved April 8, 2016, from http://www.matrade.gov.my/en/malaysia-exporters-section/33-trade-statistics/4573-top-10-major-export-countries-2015

Ministry of Finance, Malaysia. 2016 Budget (n.d.). Retrieved on April 8, 2016 from http://www.bnm.gov.my/files/Budget_Speech_2016.pdf

Ministry of Transport, Malaysia. About MOT (n.d.). Retrieved on April 10, 2016 from http://www.mot.gov.my/en/about-mot

Ministry of Transport, Malaysia. Organization Structure (n.d.). Retrieved on April 10, 2016 from http://www.mot.gov.my/en/about-mot/structure-organisation

Ministry of Transport, Malaysia. Rail Transport (n.d.). Retrieved on April 8 from http://www.mot.gov.my/en/lands/rail-transport

Ministry of Transport, Malaysia. Ports in Malaysia (n.d.). Retrieved on April 8, 2016 from http://www.mot.gov.my/en/maritime/ports-in-malaysia

Ministry of Transport, Malaysia. Transport Statistics Malaysia 2014 (2015). Retrieved on April 8, 2016 from http://www.mot.gov.my/en/Statistik%20Tahunan%20Pengangkutan/Transport%20Statistics%20Malaysia%202014.pdf

Ministry of Transport, Malaysia. Klang Valley Rail Transit Map (n.d.). Retrieved on April 8, 2016 from http://www.spad.gov.my/klang-valley-rail-transit-map

MRT Corporation Sdn Bhd. MRT Projects (n.d.). Retrieved on April 8, 2016 from http://www.mymrt.com.my/en/mrt-project

MRT Corporation Sdn Bhd. Project Structure (n.d.). Retrieved on April 8, 2016 from http://www.mymrt.com.my/en/sbk/the-mrt-sungai-buloh-kajang-line

MRT Corporation Sdn Bhd. Offset Programme (n.d.). Retrieved on June 10, 2016 from http://www.mymrt.com.my/en/careers-offset-program

MRT Corporation Sdn Bhd. Bumiputera Participation (n.d.). Retrieved on June 10, 2016 from http://www.mymrt.com.my/en/bumiputera-participation

MyRapid. LRT Kelana Jaya Line Extension Opening As Scheduled On June 30 (2016, April 14). Retrieved on April 8, 2016 from https://www.myrapid.com.my/corporate-information/media/media-releases (no longer accessible as on February 13, 2016)

Nationsonline.org, K. K. (n.d.). Political and Administrative Map of Malaysia. Retrieved April 8, 2016, from http://www.nationsonline.org/oneworld/map/malaysia_map.htm

New Straits Times. Alternative, Affordable Mode of Transport (2016, February 10). Retrieved on April 8, 2016 from http://www.ktmb.com.my/ktmb/uploads/files/portal_dokumen/paper_clipping/2016/nst6.pdf

Paultan.org. LRT3 Bandar Utama-Klang Rail Project – More Details About Planned Route, List Of Station Names Revealed (2015, May 15). Retrieved on April 8, 2016 from http://paultan.org/2015/05/15/lrt3-bandar-utama-klang-rail-project-more-details-about-planned-route-list-of-station-names-revealed/

Prime Minister's Department, Malaysia. Public Private Partnership Unit (2009). Retrieved on April 8, 2016 from http://www.ukas.gov.my/c/document_library/get_file?uuid=02f1ea81-8075-4387-8b69-ebb2120292f1&groupId=15223

Sanusi, N., & Ghazali, N. (n.d.). The Creation of Bangsa Malaysia: Towards Vision 2020 Challenges. Retrieved April 8, 2016, from http://www.ukm.my/fep/perkem/pdf/perkem2014/PERKEM_2014_5D1.pdf

Suruhanjaya Pengangkutan Awam Darat, Malaysia. The Klang Valley Double Track Project (KVDT) (n.d.). Retrieved on September 1, 2016 from http://www.spad.gov.my/land-public-transport/rail/klang-valley-double-track-project-kvdt

Suruhanjaya Pengangkutan Awam Darat, Malaysia. Klang Valley Mass Rapid Transit (KVMRT) Project (n.d.). Retrieved on April 8, 2016 from http://www.spad.gov.my/land-public transport/rail/klang-valley-mass-rapid-transit-kvmrt-project

Suruhanjaya Pengangkutan Awam Darat, Malaysia. National Key Results Areas for Urban Public Transport (n.d.). Retrieved on April 8, 2016 from http://www.spad.gov.my/about-spad/projects-and-initiatives/national-key-results-areas-urban-public-transport

Suruhanjaya Pengangkutan Awam Darat, Malaysia (SPAD). E-Newsletter, Ed. 1, Jan - Apr 2016 (n.d.). Retrieved on April 8, 2016 from http://www.spad.gov.my/ms/e-newsletter/butiran-maklumat

Suruhanjaya Pengangkutan Awam Darat, Malaysia. Organization Structure (n.d.). Retrieved on June 10, 2016 from http://www.spad.gov.my/about-spad/our-organisation/organisation-structure

Suruhanjaya Pengangkutan Awam Darat, Malaysia. Greater Kuala Lumpur/Klang Valley Public Transport Master Plan (2011, September). Retrieved on April 8, 2016 from http://www.mymrt.com.my/cms/upload_files/report/report_download_000032.pdf

Suruhanjaya Pengangkutan Awam Darat, Malaysia. National Land Public Transport Master Plan (2012, September 27). Retrieved on April 8, 2016 from http://www.spad.gov.my/sites/default/files/national-land public-transport-master-plan-final draft.pdf

Stockhut. CIDB aims to mandate use of 3D building plans by 2019 (2015, September 7). Retrieved on June 10 from http://www.stockhut.com.my/news/65721

The Borneo Post. Double Pan Borneo Kicker with Sabah PDP Announced (2016, April 13). Retrieved on April 13, 2016 from http://www.theborneopost.com/2016/04/13/double-pan-borneo-kicker-with-sabah-pdp-announced/

The Edge Markets. Government Reduces Development Expenditure (2016, February 2). Retrieved on April 8, 2016 from http://www.theedgemarkets.com/my/article/govt-reduces-development-expenditure

The Malaysian Reserve. GreenTech To Set Up 300 Electric Charging Stations By 2016 (2015, September 11). Retrieved on September 1, 2016 from http://www.themalaysianreserve.com/new/story/greentech-set 300-electric-charging-stations-2016

The Star Online. MRT Developer Engages Project Delivery Partner (2012, March 3). Retrieved on April 8 from http://www.thestar.com.my/news/community/2012/03/03/mrt-developer-engages-project-delivery-partner/

The Star Online. Bank Negara Annual Report 2014: More Direct Investments Abroad (2015, March 11). Retrieved on April 8, 2016 from http://www.thestar.com.my/business/business-news/2015/03/11/more-direct-investments-abroad/

The Star Online. China Investments to Lift Malaysia's Outlook (2016, April 17). Retrieved on June 11, 2016 from http://www.thestar.com.my/news/nation/2016/04/17/china-investments-to-lift-malaysias-outlook/

The Star Online. LRT 3 Project Starts This Month, 96 Companies Shortlisted for Packages Worth RM9bil (2016, May 5). Retrieved on May 10, 2016 from http://www.thestar.com.my/business/business-news/2016/05/05/lrt-3-project-to-start-this-month/

The Star Online. Malacca Int'l Cruise Terminal to be Completed Next Year (2016, June 23). Retrieved on June 30, 2016 from http://www.thestar.com.my/business/business-news/2016/06/23/malacca-intl-cruise-terminal-to-be-completed-next-year/

The Sun Daily. RM40b Malacca Gateway to open doors in 2018 (2014, February 7). Retrieved on April 8, 2016 from http://www.thesundaily.my/news/951031

Trading Economics (n.d.). 300.000 Indicators From 196 Countries. Retrieved April 8, 2016, from http://www.tradingeconomics.com

Trading Economics. Malaysia CPI Transportation 2015-2016 (n.d.). Retrieved on June 10, 2016, from http://www.tradingeconomics.com/malaysia/cpi-transportation

Transforming Urban Transport. Retrieved April 8, 2016, from http://documents.worldbank.org/curated/en/509991467998814353/pdf/97393-WP-P152893-Box391466B-PUBLIC-MEM12-Draft-v3-3b.pdf

Unit Kerjasama Awam Swasta, Malaysia. Latar Belakang (n.d.). Retrieved on April 8, 2016 from http://www.ukas.gov.my/latar-belakang

World Bank (n.d.). GDP (current US$). (n.d.). Retrieved January 5, 2017, from http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=MY

World Bank (n.d.). Inflation, consumer prices (annual %). Retrieved April 8, 2016, from http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=MY

World Bank. (2015, June). Malaysia Economic Monitor Transforming Urban Transport. Retrieved April 8, 2016, from http://documents.worldbank.org/curated/en/509991467998814353/pdf/97393-WP-P152893-Box391466B-PUBLIC-MEM12-Draft-v3-3b.pdf

World Bank (2016, December 16). Gross Domestic Product 2015, PPP. Retrieved January 6, 2017, from http://databank.worldbank.org/data/download/GDP_PPP.pdf

Worldbank Data. Quality of Port Infrastructure (n.d.). Retrieved on June 10, 2016 from http://data.worldbank.org/indicator/IQ.WEF.PORT.XQ

World by Map (n.d.). Land Area - World Statistics and Charts as Map, Diagram and Table, 2015. Retrieved January 4, 2017, from http://world.bymap.org/LandArea.html

World Economic Forum, global Competitiveness Report 2009-2015 (n.d.). Retrieved on April 8, 2016 from https://reports.weforum.org/global-competitiveness-report-2015-2016/competitiveness-rankings/

World-o-meters (n.d.). Countries in the World by Population, 2016. Retrieved April 8, 2016, from http://www.worldometers.info/world-population/population-by-country/

World Population Review. Malaysia Population 2016. (2016, June 23). Retrieved on April 10, 2016 from http://worldpopulationreview.com/countries/malaysia-population/

This publication is co-funded by
the European Union

EU-Malaysia Chamber of Commerce and Industry

CONTACT DETAILS

Suite 10.01, Level 10, Menara Atlan, 161B Jalan Ampang, 50450 KL
Tel: +603-2162 6298 Fax: +603-2162 6198 Email: eumcci@eumcci.com

For more information, helpdesk for EU companies can be found at www.eu-sme.my and www.eu-sme.com.my